Telephony.

THE AMERICAN TELEPHONE JOURNAL

Comprising Telephony, American Telephone Journal, Sound Waves, Telephone Magazine and The Telephone

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CONTENTS.

Editorial 697
The World's Construction Record. By John Grant..... 699
The Logansport Home Telephone Company. By J. C. Kelsey 703
Calculation of Currents in Divided Circuits. By Ralph Raymond..... 706
British Telephone Notes. By Abercrombie..... 709
Ideas of the Workers.....711, 712
Rate Regulation at Los Angeles..... 713
What the Law Decides. By A. H. McMillan..... 715
Telephone News.....717, 718, 719
Recent Telephone Inventions. By Max W. Zabel.....720, 721
Manufacturing Progress.....722, 723, 724
Condensed News Reports.....725, 726

Interference with Competitors' Contracts Punished.

A decision which may in future have a considerable bearing on maintaining the integrity of Independent long distance contracts, has just been handed down by the Supreme Court of Iowa. Incidentally it indicates the attitude of the court toward methods of unfair competition which frequently characterize the "trust" type of corporation.

The decision is reported in the Des Moines Capital of May 16, 1910, as follows:

"The Supreme Court today rapped the Standard Oil Company for interfering with the trade of independent oil companies, and in so doing the court affirmed the action of the Polk County district court in awarding F. S. Dunshee $6,000 for damages alleged to be due from interference of the Standard Oil Company with the contracts of the Crystal Oil Company of Des Moines.

"For some years the Crystal company, as an independent selling agency, bought its oil from the Standard. A break occurred between the two and the Crystal bought elsewhere. The Standard then put on some oil wagons and wherever it saw a Crystal Oil Company sign in the window it is alleged that the Standard agents would try to get the consumer to buy Standard products instead of the Crystal. Dunshee brought action for damages and was awarded $6,000. The Standard appealed, but the Supreme Court affirmed the district court, holding that the action of the agents of the Standard Oil Company was such an interference with the contract rights of the Crystal company that damages were due the Crystal company."

Such methods are not unknown in the telephone field, and this decision will be welcomed by those who have suffered from this type of guerilla warfare.

The Apprentice and His Wage.

Most manufacturers are accustomed to take young men into their employ for the purpose of teaching them the business. The term "apprentice" is applied to such beginners, a survival of the customs of past centuries. The apprentice enjoys privileges not given to the ordinary workman in that he is transferred from department to department in order that he may learn something about all needful parts of the business. While some large manufacturers have a definite course of routine, smaller concerns govern the disposal of their apprentices more or less according to

the needs of the business from time to time. Nevertheless, the nature and treatment of the apprentice as such is always kept in mind.

The apprentice usually has to begin work at a salary which is very much lower than that paid to regular workmen. During a period of commercial depression a number of years ago, technical graduates had to accept as low as fifty cents per day as apprentices in a certain large electrical factory. Conditions at the present time are better, the rates averaging from forty to fifty dollars per month at the start.

It is characteristic of young men to aim high, especially those who have enjoyed the advantages of a college education. Not infrequently coupled with this is the idea that, because of their education, they should at once enter life's work with a comfortable salary. This one is seldom able to do. When the fact is discovered, the young man feels hurt and abused. He can not explain why, after he has spent several years in special preparation, he should be compelled to accept low wages. A short study of conditions will reveal some of the reasons for this condition.

The study made by Mr. James M. Dodge reveals the conditions which actually exist. The average weekly salaries paid to men having varying degrees of education are given in the following table. The age of 22 is believed to represent the average time at which a college man enters the field.

	——Age——	
Classes—	22	32
Unskilled labor	$10.00	$10.20
Shop trained labor	13.50	15.80
Industrial or trade school trained labor	17.00	25.00
Technical school trained labor	13.00	43.00

These figures reveal the fact that with all his special education the technical graduate must accept, at the start, a salary which is lower than any except unskilled labor. Why are the others able to command more?

Both the shop and industrial school trained men come to an employer with something in hand which is of immediate value. The shop man has had a few years of contact with tools and materials, and such fragmentary instruction as he can pick up. He is, therefore, at once able to perform much work which will earn money for the employer. The industrial or manual training school has taught its students some of the reasons for things, in addition to training the hand and the eye in the actual performance of shop labor. The increased mental activity due to this gives them a marked advantage over shop trained men and accounts for the increased earning ability.

The training of the university student is along broader lines. Though the courses include shop work of various kinds, the emphasis is placed on the more theoretical studies. Principles, laws, and methods of reasoning and deduction are the important studies, and each is developed along the line of the specialty to be followed by the student. It is a brain training rather than a hand training. Hence, when the technical graduate applies for work he has little which is of immediate value to the employer. Very often the first few months of work are a real financial loss to the concern. The young man must demonstrate his ability to fit into the plans of the organization. The offering of an apprentice course is a recognition of this state of affairs, and by it three objects are secured:

First, the graduate is given more special attention and a better opportunity to learn the various phases of the busines. Second, he is able by contact with various departments of work to determine which appeals to him most strongly, and more intelligently to select one of them for his life's work. Third, the low apprentice wage serves as a sieve, to screen out undesirable men. Among technical graduates there are frequently those who have been sent to college by their parents, and who have not availed themselves of the opportunity for self-development which was offered. They have gone, as we once heard it roughly stated by a manufacturer, "to get a four-years' loaf on the old man." These are looking for a rapid rise in pay with a quick advance into an easy life. Not having a native love for hard, conscientious work, or the power to realize their own deficiencies, they soon tire of the apparent routine and seek elsewhere what they term a "fair chance."

The man who adapts himself to the conditions, and works to make his services of real value, will rise to the level of his ability.

There is plenty of room in the telephone field for young men of the right sort. Do not be afraid of low wages at the start. Do anything, be anything in order that you may learn. The surest way to increase the pay check is to forget it, and devote your energy to learning the telephone business.

The telephone differs from all other electrical devices, in that it is the only electrical appliance which does not require skill on the part of its user.

No Joy in Judge Foster's Telephone.

The telephone promoter and the exuberant salesman of service may well pause in their all-compelling course to contemplate the plaintive case of Judge Warren Foster, of New York. Taken to task for having a "joy telephone" at the city's expense, his response was such a choice bit of writing, setting forth his personal grievance with such naïve facility of expression, that the *Sun*, in reproducing it, added its own touch of humor in the remark that "joy riding and joy telephoning are both very bad, and deserving of the ever alert attention of the comptroller. But in the present case there seems to be no doubt that Mr. Prendergast got the bull by the wrong horn."

"Far from being a private convenience," says the judge, "it is a personal nuisance. That it is a public convenience will be testified to by many a poor fellow who has been spared a night in jail because of its existence. On many a cold night I have been summoned from my warm, warm cot, whether I wanted to or not, to shiver at the telephone, only to receive word that some unfortunate under arrest would give bail if I would accept it.

"I have no family to avail of this telephone (whost cost to the city, I see, is stated in the newspapers to be $36 per annum), and without it I can live a life of nocturnal ease and quiet."

The World's Construction Record

By John Grant

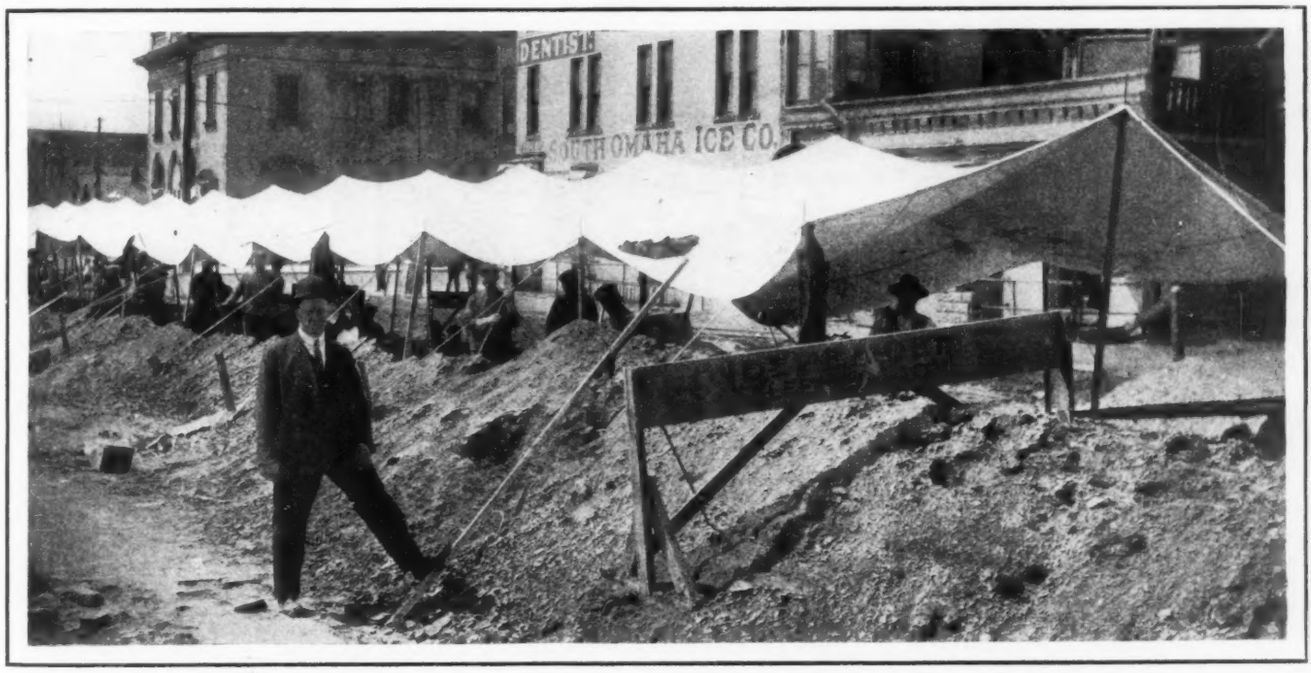
There never was a telephone job where speed was more imperative than at South Omaha. Never did a construction force working under pressure meet such nerve-racking weather, threatening to throw out all calculations and not only break the schedule but destroy work already done. Yet one detail after another was taken care of in record time; broken schedules were readjusted at a moment's notice; architects, builders, factories, railroads, foremen and laborers were kept keyed up to the best pace they had ever made. When rain came, tents were put up to keep it off, and the work kept on. And when the job was completed on time, not only was the world's record for telephone construction broken, but a new mark was set which ranks among the big achievements in American industrial history.

A telephone exchange is usually built after weeks or months of careful planning. The building plans are rough drawn, and worked over by the architects and the engineers of the owners; then they go to the manufacturer of the equipment. Here they are checked and criticized by experts, and finally the permanent plans are drawn. Then the manufacture of the equipment and the construction of the building can be taken up at the same time. When the building is ready the manufacturer knows just how his equipment will be housed, and sends out a man equipped with blue prints showing every detail he needs. Everything is worked out, and put on paper. The outside work—conduit, manholes, cable work, are all mapped out and set down in systematic records. Stores are on hand far ahead of their needs; or if there is a shortage, speed is slacked, or a section of work postponed. An ordinary good man takes care of each part of the work, and finds little to do beyond seeing that his men follow paper instructions, and keep their workmanship up to grade. The work can be split up among several foremen, and nobody needs to do overmuch headwork on the job.

South Omaha was not built this way. It is an honor to Independent telephony that it can attract and develop a man capable of getting this exchange built on time.

Frank H. Woods and the other members of the reorganization committee of the Omaha Independent Telephone Company had been straightening out snarled financial threads for months. When they got things on a settled basis, by the appointment of a receiver, they found themselves facing a possible forfeiture of the valuable South Omaha franchise. Omaha needed this connection, with its big stock yards business. If an exchange were not working within six weeks, the company's rights would be endangered.

It is characteristic of the way Woods does things that no attempt was made to shift, to dodge the issue. He decided that South Omaha should have its exchange; no temporary makeshift, but a big, fine looking, permanent building, with its underground cables, and full initial equipment in shape to do business permanently.



Part of the Big Canvas Awning which Protected the Trench from Cave-ins and Enabled a Gang of Over 250 Men to Work During the Almost Continuous Rains.

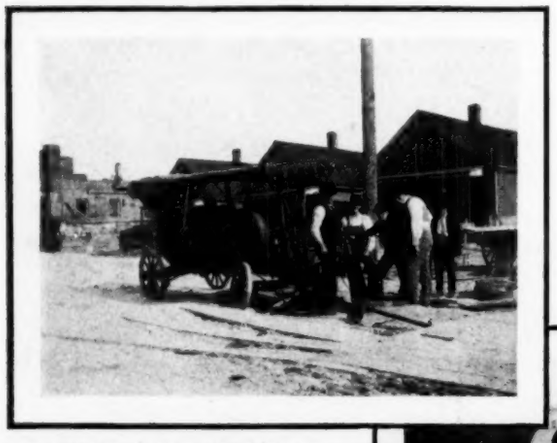
At 4 p. m., April 11, the court issued an order authorizing construction to be undertaken. The race was on, to be run with unceasing effort until the last day of the franchise, May 23. F. E. Ebersole, general manager for receiver Lysle I. Abbott, was up against a real job. Everything had to be done, and thousands of details had to be planned; and then they must be executed so that one would match with another—and that element of time gave no chance for putting things on paper. Nearly every item had to be thought out and got right, once for all, and then remembered.

The telephone company owned a lot in South Omaha. It was surveyed on the morning of April 12, and at 7 p. m. that day contracts were made with the architect and the builder. The architect drew up pencil sketches of the general plan, and these sufficed to start work. Details were figured out from day to day as the work proceeded.

On the morning of the thirteenth, forty hours after the work was authorized, men were excavating the cellar. They took

out the earth from a space 40x33 ft., to the depth of 13 ft., for the rear of the building. The whole building was to be 40x85 ft. inside, two stories, with 13 ft. ceilings.

Details of construction show the amount of work, as well as the fine type of building erected, which is one of the best in South Omaha. It is a steel frame building, with brick walls. A special type of floor construction gave the telephone company access to both floors at once, and avoided the delay which would have been occasioned by using all-concrete, which sets slowly. Brick arches were built over forms between girders on 5 ft. centers. These arches were filled in with coarse concrete, then center pieces were put in, and a filling



The Cable Pulling Machine for Drawing Cable Into Ducts.

of fine concrete to the floor level. This gave a substantial floor, which set quickly.

The roof was built of 2x4 set edgewise on an iron frame, with a gravel roof on top, making a slow-burning construction. The ceiling for the second floor was of the suspended type, angle iron hung on rods, with metal lath to hold the plaster securely in place.

Running in the First Cable, May 20.

The general layout of the building leaves the first floor open for offices, and provides for placing the exchange equipment on the second floor.

The main entrance, at the front of the first floor, opens into a 7-ft. hallway, 52 ft. long, intersecting a cross-hall 3½ ft. wide. On the north of the building is a side entrance, and at the south end of the cross-hall a stair leads up to the switchroom.

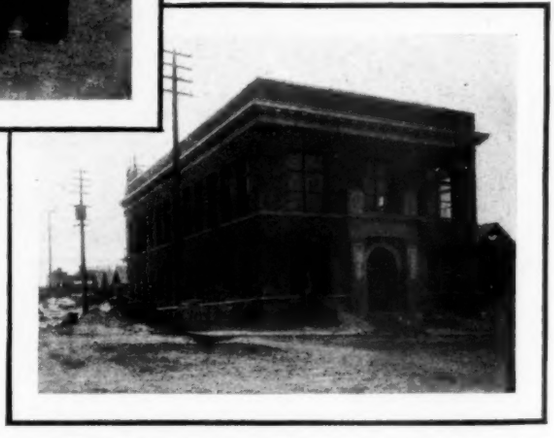
To the left of the main hall, at the front of the building, is a large room which will be used as a cashier's office and for clerical work. Opening off this room is a vault for storing books and papers. At the right hand of the front entrance of the building are two rooms, one the office of the manager, the other for the contract department. A telephone booth for the accommodation of the public opens into the main hall. At the rear of the first floor is a room 30x40 ft. This is a supply room and shop for making such minor repairs as may be necessary as a part of maintenance work. The basement contains the storage battery, gas engine and charging generator.

Plans for the underground construction were filed with the city April 12, 13 and 14. On April 19, 180,000 duct feet of conduit, in 2, 3, 4 and 6 duct sizes, was ordered from Kirkpatrick, of Chicago. Nine days later, on April 28, three carloads of conduit were received at South Omaha and unloaded on the 28th, 29th and 30th of the month. The balance came in from time to time, as needed, and the job was not held up at any time on account of conduit.

Rain storms were what threatened to hold up the work. Many feet of trench were open; then it began to rain, and from that time there was hardly a whole pleasant day until the close of the job. On the second day of the rain the men refused to work in the wet ditch, and as the excavation was in soft clay there was serious danger that the sides of the trench would cave in. Then thousands of yards of earth would have had to be thrown out again, and the trench braced for all new work. But this was a job where wet weather was not allowed to interfere very long with progress. Those in charge of the work were equal to the emergency. They were not sentimental and hopeful that it would clear up pretty soon. Taking a hard look at the sky, they telephoned for canvas.

At the same time work on the trench was being held up in the rain, the bricklayers had been obliged to quit laying up the walls of the building. The picture published in TELEPHONY of May 14 was taken on Friday, May 6, as the bricklayers were working on one side of the building under canvas, while other men were putting up a scaffolding to hold awnings over the balance of the walls. On that same afternoon canvas was put up over the trench, and men went to work again with a rush. The canvas was put up in eight sections, each 20 ft. wide by 50 ft. long, thus covering 400 ft. of trench, and giving a width of 20 ft., amply protecting the sides of the excavation. It was held up by center poles 9 ft. high, with 14 6-ft. poles at the sides.

On May 23, at 6 p. m., all conduit required under the ordinance, covering the fire district, was laid. This included 78,878 duct feet, laid in 12,955 lineal feet of trench, with



The Completed Building, Ready for Equipment 35 Days After Survey was Made.

48 manholes. All conduit was laid in a concrete envelope three inches thick at the bottom, with at least three inches on the sides and top; 265 men were working in the trench. Some of the trench was 18 ft. deep, and if the earth had ever started to slip to any extent during the wet weather it would have been all up with any chance of finishing the job on time.

One of the pieces of work which showed what the men on this job really could do when they exerted themselves was the laying of the conduit below the main line of the Union Pacific through the yards at South Omaha. Here the trench crossed below 18 tracks at an angle of 45 degrees, making a 265-ft. run. Work began Sunday, May 15, at 7 a. m., and was carried through steadily until 4 a. m., Monday, at which time the job was all complete, the men having excavated the ditch, laid their conduit, back-filled, and tamped up the tracks.

Cable was ordered April 19 from the Standard Underground Cable Company at Pittsburg, Pa. Cutting lengths were furnished April 28, and the first car was received May 13, having been four days on the road. This cable was in 50, 75, 150 and 200 pair sizes. The first cable was pulled and spliced May 20.

The good time made by the railroads in deliveries was a remarkable feature of this job. Mr. Ebersole kept in close touch with the railroads, and succeeded in getting first-class co-operation all along the line. Throughout the job he was getting 48-hour deliveries from Chicago over the Northwestern; the four-day delivery from Pittsburg has been mentioned, and one shipment from the National Conduit & Cable Company, Hastings-on-the-Hudson, N. Y., came through in five days.

C. W. Hull, of Omaha, who furnished the sand and stone for the building, has reason to think that telephone men are hustlers. Mr. Hull has 47 teams, and at one time he had 37 working all day for the telephone company. This means that a good many tons of material was unloaded in the day. Mr. Ebersole was on the job and saw that as fast as the material got there it was used.

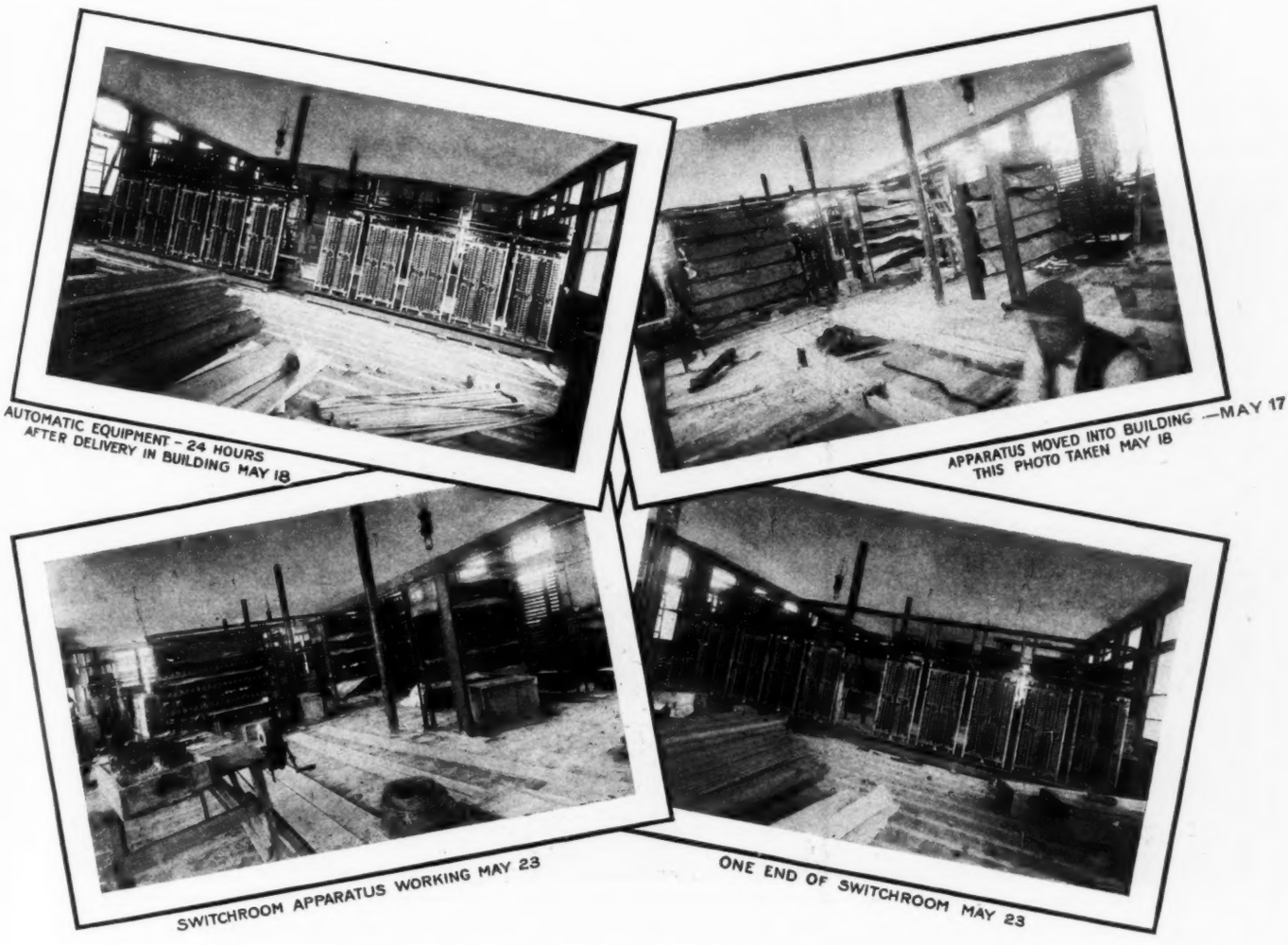
On May the company had 6,243 feet of cable pulled and 184 poles set.

The automatic switching equipment, including the power plant, was ordered from the Automatic Electric Company, Chicago, on April 22, and arrived in South Omaha on May 10, having been shipped on the 5th. With the apparatus came expert installers under the direction of foreman W. H. Ricksher. They succeeded in getting the apparatus set up, with 100 lines working, at 6 p. m., May 21. The first connection between telephones was put through between 7 and 8 p. m., May 21, forty days after the order was signed to authorize construction. On May 28, 11 days after starting the installation, the completed switching equipment for 1,000 lines was ready for operation in every respect. There was no temporary work done on this job. Everything was completed as the work progressed.

The people who are now receiving service through the South Omaha exchange are all bona fide, paying subscribers. The franchise has been made good by not only a permanent exchange, built in record time, but by one of the best exchanges in the country. And it was so near complete on the day its picture was taken, May 23, that even the stone carving beside the front door had been finished.

Only telephone men who have been through this kind of work can realize the amount of detail involved in carrying on such a job. Everything centered in one man. He had to be on the job all the time, for there were no blue prints. Things were planned to save the last minute of time. Every foreman had a messenger boy to run his errands. The foreman's job was supervision, and to that he held himself. Nothing was allowed to go wrong because there was no boss on the job—the boss was always there. The big gang of men was kept cheerful enough to work at a driving pace in weather that made the men on almost every other outdoor job in Omaha quit in disgust. Ebersole put in from 16 to 24 hours a day, and one stretch of 34 hours. None on the job knew when he slept—but sleep he did, for he came through looking ready to do it again next month.

South Omaha was a big demonstration of the power there is in the spirit of never seeing a possible defeat. It was a


AUTOMATIC EQUIPMENT - 24 HOURS AFTER DELIVERY IN BUILDING MAY 18
APPARATUS MOVED INTO BUILDING —MAY 17 THIS PHOTO TAKEN MAY 18
SWITCHROOM APPARATUS WORKING MAY 23
ONE END OF SWITCHROOM MAY 23

fight against time that was won because everybody in it knew it could be won.

The South Omaha exchange is no less creditable from the point of view of the business executive than from an engineering standpoint. Receiver Abbott was appointed April 6, and within five days had completed all arrangements for financing the building of this big addition to the company's plant, had satisfied the court of the necessity of authorizing it, and received the order allowing certificates to be issued to undertake the work. On the following day contracts for the building were signed, and the day after Mr. Abbott and Mr. Ebersole were in Chicago getting bids on all material. It appears no less than a triumph of good management to those familiar with the magnitude of such work that, in spite of extraordinary difficulties, telephones were working two days within the time limit of the franchise.

North Texas Telephone Men Get Together.

Thirty-five Independent telephone men got together at Sherman, Texas, during the latter part of May for one of the best meetings ever held in the State. That the Texas men are "live ones" was shown by their crowding three busy sessions into the day. In the morning there was a cheering discussion of "The Progress of the Independent Movement in Texas" and "The Use of the Shield in Advertising." Addresses were delivered by S. W. Menefee of Kansas City, C. A. Pike of Fort Worth, C. A. Shock, Sherman, E. W. Dunaway of Dallas, and Mike High of Petty. District President C. A. Pike, of Fort Worth, presided.

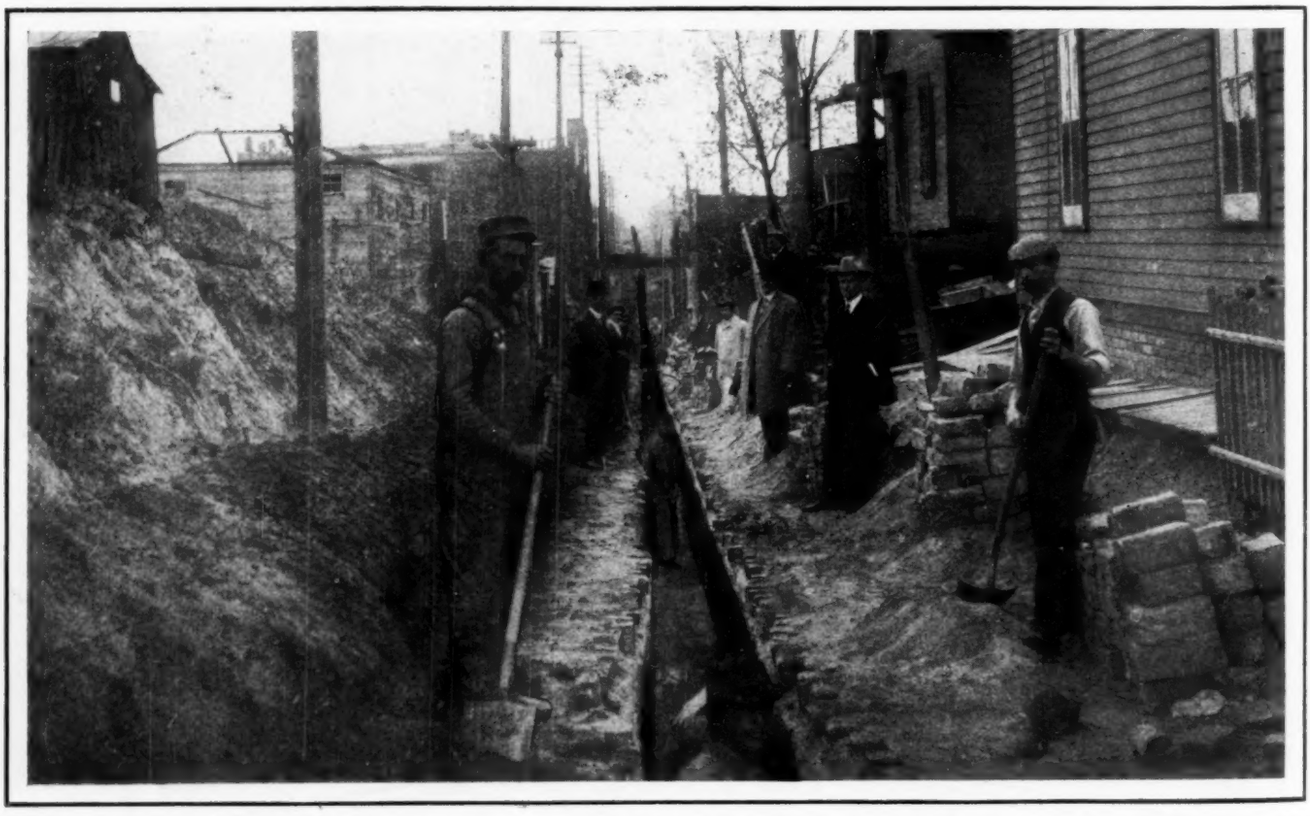
Good reports of new construction at Galveston, Dallas and Houston, and new long distance lines indicate the progress of the industry. It was agreed that the Shield should be extensively used in advertising.

The afternoon session opened with a welcoming address by Mayor John C. Wall of Sherman. Mr. Wall paid a glowing tribute to the vigor and push of the men behind the Independent movement and spoke on the advantages that Sherman enjoys because of the service rendered by the Grayson Telephone Company. He stated that rates had been lowered, service improved and extended and that through this company, Sherman and Denison had been brought in closer relations to one another to the advantage of both. Mr. E. M. Chamberlain of Greenville, who is president of the State Association, responded to the Mayor's address.

The remainder of the afternoon was given over to the discussion of "Toll Lines, Their Construction and Operation," and "Best Methods of Advertising the Telephone Business." The discussions were participated in by A. Smith of Fort Worth, editor of the "Transmitter;" C. W. Thomas of Pottsboro; E. M. Chamberlain of Greenville; C. B. Felder of Wichita Falls; Leon Spencer of Gainesville; Dick Bruton, San Marcos and M. T. Goodman of Clarksville.

Night Session.

The night session was given into the hands of the Knights of the Shield, a secret order composed of Independent telephone men and proved to be a happy climax to the convention. A search among the delegates revealed the fact that there were eight "unfortunates" present, and according to the rules of the order these men were blindfolded and after a solemn march about the streets, chained together, accompanied by appropriate music and a sufficient number of brave Knights in brilliant costumes, with sword and spear to protect them from danger they were returned to the hall and "telephated" which is a word whose meaning is known only to those who have experienced the necessary process to become Knights of the Shield. At eleven o'clock a banquet was held.



Half a Mile of Labor, May 14. Lysle I. Abbott, F. H. Woods, and F. E. Ebersole, the "Men Behind the Guns," Standing at the Right.

Personal.

Will Long, lineman, is urgently requested to return to Colby, Kan. His child is sick. Anyone knowing his whereabouts will confer a favor by notifying Mrs. Will Long, Colby, Kan., immediately, by wire.

The Logansport Home Telephone Company

An Indiana Success—A Lesson in Home Financing—The Folly of Universality Exemplified.

By J. C. Kelsey

On January 1, 1886, the City of Logansport had 147 telephones. These telephones earned $5,453; as the average number for the year was 140, the average charge of each telephone to the Logansport citizen was $39.

Out of this $5,453, the Central Union paid to the Octopus $$1,932 as royalties, or 36 per cent of its entire earnings.

Each station paid in royalty about $14 per year. And it was one of those Blake telephones, too, which can be seen now only in towns where no competition prevails, or in towns where there is no use for the Bell to try to compete.

Yet in spite of paying 36 per cent of its gross earnings for royalty, the Central Union earned in Logansport about $1,280, which was easily 13 per cent on the actual investment.

The Central Union has paid no dividends within the memory of many men.

But the chances are that it will, since in New York it was announced that the Bell parent would take stock for the floating debt, and would pay 5 per cent dividends.

The virtuous Bell parent does things in a peculiar way, and for reasons that the human mind can not fathom.

In 1885, the Central Union company had 147 telephones.

In 1895, the Central Union Co. had 400 telephones, charging $60. for business and $48. for residence, and giving no farm service at all.

On July 17, 1895, a franchise was granted to an Independent telephone company, which sold each subscriber a telephone for $25., and charged $18. for business and $15. for residence service.

About 1899 the Central Union secretly acquired control of the new company and operated it as a false Independent.

But the Central Union, which had reduced rates to $24 for business and $18. for residence telephones, got up courage enough to charge all new subscribers, or anyone who made a new contract, $48. for business and $36. for residence service.

You can see how the Bell people invariably act. Let them kill competition, and the citizens will pay for service with a vengeance.

The Central Union franchise was to expire in January 1902, and in 1901 it informed the City that unless a new and better franchise was granted, it would remove poles and toll connections, and leave Logansport without service of any kind.

Strange to say, the Commercial Club opposed the Bell, and the Council passed a blanket franchise which no company would accept.

Finally Theodore Thorward appeared at Logansport, representing Fort Wayne capital. With that support, ten Logansport business men joined, and made an application for a new franchise.

After a long and vigorous fight, they were awarded one on October 21, 1901.

The Central Union left the old Independent plant standing long enough to bother the Home Telephone Co., in its construction work, and finally moved everything out of town, the last directory appearing in March 1901.

No one can complain of duplication when the Bell plant gets clear out of a city of 20,000 people.

So, on April 1, 1902, the Home Telephone Co. began to charge for service at the rate of $30. for business and $15. for residence.

Mr. Thorward also had the South Bend franchise. As he could get little home aid in that town, the Fort Wayne interests sold out to Logansport citizens, so that the company is a home-owned company purely.

On April 1, 1902, the Central Union company had 600 telephones, or one for every 28 people.

To-day the Home company has 2,800 subscribers in a city of 20,000, or one in 7 of the population.

The subscriber list grew as follows:

April 1, 1902	673
April 1, 1903	1,518
April 1, 1904	2,145
April 1, 1905	2,738
April 1, 1906	3,235
April 1, 1907	3,537
April 1, 1908	3,808
April 1, 1909	3,936
April 1, 1910	4,205

This list includes not only Logansport, but Walton, Galveston, Young America, Lucerne and New Waverly.

The earnings per station for the years have ranged as follows:

April 1, 1903	$23,370	$21.32
April 1, 1904	35,649	19.45
April 1, 1905	49,672	16.63
April 1, 1906	59,022	19.76
April 1, 1907	66,339	19.60
April 1, 1908	72,805	19.82
April 1, 1909	74,732	19.65
April 1, 1910	80,010	19.65

Logansport citizens may well congratulate themselves upon the saving in telephone service.

In monopolistic days, they paid the Bell $39. per station.

To-day, they pay a little over $19. and they have the privilege of connecting with 4,205 subscribers instead of 147.

In other words, Logansport citizens pay $1.00 for telephone service rendered, not counting quality and quantity alone, where they once paid $58.

Citizens of Logansport get service which has no superior in quality, for less money than any town of its size in America.

But the investor in this plant need have no fear for his safety.

The Bell company has taught bankers and bond dealers generally, that telephone operation is an awfully expensive thing.

The Bell officials at Philadelphia claimed, prior to the advent of the Keystone company, that the rates of $80. were less than what it costs to supply service.

They, themselves, are not exceeding $35. per station earning, now are doing business still, and are not only paying the parent Bell 4½ per cent of the gross earnings, but manage to pay all operating expenses, and pay some dividends too.

The Logansport Home Telephone Co. also pays operating expenses and has real money left for dividends.

To show that the Logansport Home Tel. Co. has not adopted the usual Bell tactics of withholding earnings until discouraged minors sell out or commit suicide in despair, you will note the following dividends paid:

April 1, 1903	$ 8,080
April 1, 1904	18,815
April 1, 1905	24,733
April 1, 1906	31,106
April 1, 1907	34,141
April 1, 1908	30,053
April 1, 1909	30,350
April 1, 1910	30,350
	$207,628

This is nearly 60 per cent of the investment, and you have to go far to find a Bell performance as praiseworthy as this.

Each share of stock has enjoyed equal privileges. It is a case of square deal all through.

All through these years the Home company has had its share of storms.

It had a loss of $20,000 in the 1909 sleet, and cheerfully paid it out of its reserves.

It had $19,951 of reserves on hand the day of the storm, but did not make use of it all. It paid some of it by reducing the dividend $5,000 below the usual average.

There has been a great deal of bunk handed out by Bell experts (?) about storms, acts of God, terrible decay of boards. After 12 years of real Independent experience, we find that the alarm was as false as the Halley Comet scare.

Here is a plant in good condition, and ready to keep the service up to standard and also to pay dividends.

Why can't the Bell company take a few lessons in square dealing from numerous Independent telephone properties in every state?

Why do the licensees withhold profits from stockholders? Have they the notion that the parent Bell alone "needs the money?"

To show that an investor in the Logansport Home Telephone Co. has something tangible, and something good, and something safe, you will note the following investment account:

April 1, 1903	$162,000	$106
April 1, 1904	239,300	111
April 1, 1905	286,500	104
April 1, 1906	320,500	100
April 1, 1907	331,100	93
April 1, 1908	350,000	92
April 1, 1909	350,000	90
April 1, 1910	350,000	85

Dividends per station and percentages have ranged as follows:

April 1, 1903	$5.30	or 5 %
April 1, 1904	8.75	or 8 %
April 1, 1905	9.10	or 8¾ %
April 1, 1906	9.60	or 9.6 %
April 1, 1907	9.60	or 10 %
April 1, 1908	7.80	or 8⅔ %
April 1, 1909	7.75	or 8⅝ %
April 1, 1910	7.21	or 8½ %

Which is perferable? To be a stockholder in the Missouri & Kansas Tel. Co. or Central Union, or one in the Logansport Home Telephone Co.?

Or, which is preferable? To be a stockholder in the Western Electric Co., owning $60,000,000 worth of property and paying but $1,200,000 in dividends, a rate of 2 per cent—or one in the Logansport Home Tel. Co., which has $350,000 actually invested, and pays $30,000 in dividends of 9 per cent?

We are often dazzled by size, but we generally pay for the error of our dazzled senses.

For proof that the Logansport Home Telephone Co. honestly pays 9 per cent upon its investment, note the following:

Net station rentals,	$69,025
Net tolls,	10,985
Total	$80,010
Cost,	34,010
Net for reserves,	$46,000
Reserves and reconstruction,	12,000
Net for dividends,	$34,000

On a station basis, the Home Telephone Co. performance is as follows:

Net station rental,	$17.00
Net tolls,	2.65
Total earnings,	$19.65
Cost,	8.35
Net for reserves and reconstruction	$11.30
Reserves and reconstruction,	3.00
Net for dividends,	$ 8.30

This means that the Logansport Home Telephone Co., after setting aside $3. per station year, is earning 9 per cent upon the investment.

The banker, usually accustomed to big Bell talk, doubts that a plant can be operated for $8.35 per telephone station. But it can be done, and is being done by hundreds of plants.

The one great item that magazine editors, bankers and other advocates of natural monopoly overlook, is the difference between the ability of the Bell and Independents to operate plants at a certain cost.

It costs the Bell companies about $22. to operate a tele-

phone, and $5. more for reconstruction, and they accordingly have to charge the people from $32 to $60 a year for the service.

Independent interests get $19. to $27. for the service and learned long ago how to get along on limited funds.

Today, they know how to operate at a cost from $9. to $12. and they have built well enough so that $3. a year will take care of reserves and reconstruction.

Let natural monopoly get under way once, and the people of this country will pay $2. for every $1. they pay now, and the quality will not be improved either.

The Bell interests would simply be compelled to double the rates, because they have expensive habits.

They have too much unproductive labor, too many relatives to take care of. And New York financing comes high, too.

Up to date, the Home Telephone Co. has collected $438,480.

Its total losses in collections have been put $184.99.

The people appreciate their telephone service.

Here is a company, which started at a public demand to give the public service, to furnish a good investment for local people, and keep the benefits at home.

You can not but wonder that the Central Union Telephone Co. published its last report in 1901.

It is a foreign corporation, has paid no dividends. Also its own employes who were induced to invest in Central Union stock prior to General Sabin's arrival, how they like their medicine!

When the Bell trades its floating debt rights for Central Union stock, immediately will it find that "new economies" will justify a dividend.

But any action of the Central Union will not affect the Home Telephone Co. It is strongly entrenched and can not be dislodged from its position.

For a few business men, in moderate circumstances, to build up a plant costing $350,000 and worth many dollars more, is a wonderful performance.

The telephone furnishes the greatest opportunity for investment and returns.

That is why the Bell is fighting for monopoly so strongly. It dislikes to have anyone get honest returns.

The leading spirit in the Logansport Home Telephone Co. is a man whom everyone knows. He is a leader in the National Telephone Association, and is the newly elected Secretary of the Indiana State Association.

Walter J. Uhl took business priciples and his years of commercial training into the telephone business, and that is one potent reason why the Logansport Home Telephone Co. is one of the Independent successes of America.

MORAL: Respectability is not a guarantee of justice to the minor stockholder.

Prompt Telephone Service Saves California Grain Field.

Prompt telephone service and the willing assistance of his town people saved W. T. Harlan from having a disastrous grain fire yesterday at his ranch, four miles from this city, says the Willows correspondent of the Sacramento, Cal., Union. The fire started in a pile of rubbish near the barn and the high north wind quickly carried it toward a 600-acre field of barley which is well ripe.

Mrs. Harlan discovered the blaze soon after it started and at once telephoned to Willows for help. It happened that two large autos stood in front of the telephone office and these were filled with men who volunteered for the run to the Harlan ranch, arriving there in eight minues.

When the twenty men arrived at the scene of the fire they found Mrs. Harlan and the members of the household fighting the fire. It was short work for the men to subdue it and the valuable grain field was saved.

T-H-R-R-R-E-E.

First Lessons in Telephone Operating.

Repeating and Giving Orders.

The principal feature of the service given by the company is accuracy in securing connections. The wrong numbers given subscribers are almost entirely due to poor enunciation of numbers and a lack of distinction between the numerals as spoken by the operators in repeating orders and in giving them over the order wires:

1. Time must be taken to repeat and give all numbers distinctly.
2. Time must be given the subscriber to correct each order after it has been repeated.
3. Numbers must be given in a full deep tone; a thin or shrill tone does not carry well over the telephone.

To avoid any tendency toward mistaking numbers, we will make special distinction in the pronunciation of the following:

THREE—To be given slowly with the "R" slightly rolled as "T-H-R-R-E-E."

FOUR—To be given slowly with emphasis on the "O" and "R" as "F-**O**-U-**R**."

FIVE—To be given slowly with emphasis on the "I" and the "VE" as "F-**I**-**VE**."

SEVEN—To be given slowly and distinctly, bringing out both syllables, as "SEV-EN."

The other numbers, "Naught" (pronounced "OH"), ONE, TWO, SIX, EIGHT and NINE, will be given more quickly but they must be spoken distinctly.

Numbers must be enunciated in the above prescribed manner on each order received.

Operators are expected to become the most skilled of all people in the clear, distinct enunciation of numbers.—Instruction Bulletin.

Of all the new fangled things under the sun,
I think you and I can agree,
The latest, the Telephone Girls have begun—
Just attempting to purl every thr-r-r-ee.

Now with all due respect for the telephone girl,
I will say, as the matter strikes me,
There's a mixture of cackle and clatter and purl
In her efforts to trill out the thr-r-r-ee.

Take the old man whose blood runs quite sluggish and slow,
If you watch him real close you will see
He is set all a shiver, from head down to toe
When the telephone girl purls out a thr-r-r-ee.

And the near poet, writing his spring round-a-lay,
Hears the woodpecker sounding a tree,
Or the brook babbling on in its own joyous way,
When the telephone girl purls out a thr-r-r-ee.

And the soldier, he springs from his desk in alarm,
And prepares to the barracks to flee,
For he thinks 'tis the drummer a-calling "To arms,"
When the telephone girl purls out a thr-r-r-ee.

And the man from the farm once again sees the fold
And he hears the faint, help-calling plea
Of a poor shivering lambkin left out in the cold,
When the telephone girl purls out a thr-r-r-ee.

And the musical man, with his A-B-C-round,
Will pause and laugh loudly with glee,
For he's sure he a Melba or Schalki has found
When the telephone girl purls out a thr-r-r-ee.

Moral.

Now it isn't a grumble, a gasp nor a groan,
Just say it real slowly, you see,
It is neither a mutter, a murmur nor moan,
It's quite easy, you'll find, to say thr-r-r-r-ee.

—*Contributed.*

Calculation of Currents in Divided Circuits

By Ralph Raymond

In designing telephone switchboard circuits containing relays or other apparatus actuated by battery current, it is necessary to be sure that currents of proper strength will flow at all times. In most cases it is very simple to calculate the current flow in all parts of the circuit, but occasionally an example occurs which cannot be solved so easily. Such a case simplified is shown in Fig. 4, and a more difficult one in Fig. 6. Such cases occur, for example, where the method of toll operation calls for a cord circuit and a switching trunk to be plugged into multiples of the same line at the same time, and when, perhaps, an operator is making a busy test at a third multiple of the same line.

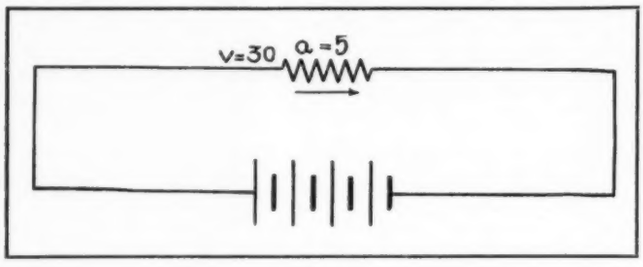


Fig. 1.

Problems like these cannot be solved directly by simple application of the law that amperes are equal to volts divided by ohms, and attempts to solve them often result in an interminable mass of algebraic equations and numerical computations, leading to the conclusion that the only way to get the answer is by connecting up a model circuit of the given resistances, applying the given voltage and reading the currents with an ammeter. An ammeter, batteries and resistance coils of the desired size are not always readily available, however, and in any case it will be granted that it would be more satisfactory, and usually more expeditious, to calculate the currents, were an easily workable method at hand.

These problems are really quite simple if properly attacked, but extremely perplexing if a false start is made in their solution, and for that reason the writer believes the following formulas may be considered worth preserving. Occasions may arise from time to time where the use of the formulas will considerably simplify matters.

A problem may be solved entirely by arithmetic, using the known values of resistance and voltage in all computations, or it may be solved by working up an algebraic formula in which letters are employed to represent the various quantities, and from which the result sought may be found by substituting the known values in place of the letters, and performing the arithmetical operations indicated by the formula. In some cases either of these methods would be very laborious, while a judicious combination of the two, carrying the general solution with letters to a certain point and there substituting the known values of the particular problem in hand, abridges the work remarkably and makes it comparatively easy to get the result desired.

In what follows the resistance of each branch of a circuit will be designated by some small letter near the beginning of the alphabet, as *a, b, c, d,* etc. The current in each branch will be designated by the capital of the same letter applied to the corresponding resistance, as *A, B, C, D,* etc. One end of the battery will be assumed to have a potential of zero, while the other end of the battery and other points in the circuit will have potentials, i. e., voltages, represented by letters near the end of the alphabet, as *v, w, x, y, z.* In an actual problem the resistances and the voltage of the battery will be known beforehand, but, as just explained, the calculation of the unknown currents can be made more easily in some cases if for a time the actual known values are ignored and replaced by general values represented by letters.

In some problems it is impossible to say from an examination of the diagram, in what direction current will flow in every one of the branches. In case of uncertainty a guess may be hazarded, and if the guess happens to be wrong it will be shown to be so by the current coming out with a negative value. If this happens it is only necessary to correct the arrow on the diagram to show the current in the opposite direction; the numerical results will not be affected at all in these cases.

In these examples the battery will be considered as having a negligible resistance. If its resistance is actually considerable it may be represented by a resistance coil in series with the battery.

To start at the beginning, Fig. 1 represents the simplest circuit possible, a battery and one resistance. The voltage is represented by v, the resistance by a, and the current by A. By the fundamental law the current is equal to the voltage divided by the resistance, or $A = \frac{v}{a}$. If in a particular example v is known to be 30 volts and a is 5 ohms, we know from this law that the current A is $\frac{30}{5} = 6$ amperes.

If there are several resistances in series they may be added together and considered as one large resistance; thus the current would still be 6 amperes if the 5 ohm resistance were made up of two parts, of 2 ohms and 3 ohms, placed end to end.

Fig. 2 represents a simple divided circuit. The current in branch a is $A = \frac{v}{a}$, and that in branch b is $B = \frac{v}{b}$. The total current is the sum of these, or $A + B = \frac{v}{a} + \frac{v}{b}$. Substituting the values of an actual example shown in the diagram, the total current is $A + B = \frac{30}{5} + \frac{30}{3} = 6 + 10 = 16$ amperes.

In this case, where a known voltage acts over two parallel branches, the easiest way to find the total current is to calculate the currents in the branches separately and add them, but there is another way which is convenient in certain problems. This is to find a single resistance equivalent to a and b

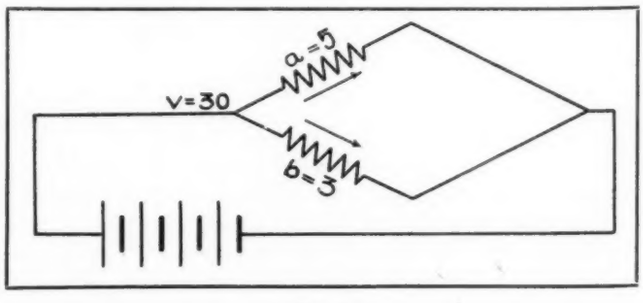


Fig. 2.

in parallel. If this hypothetical single resistance is called r, it is evident that $\frac{v}{r} = \frac{v}{a} + \frac{v}{b}$, from which is obtained the following very useful relation:

$$r = \frac{ab}{a+b} \qquad (1)$$

In the numerical example the combined resistance $r = \frac{5 \times 3}{5+3} = 1\frac{7}{8}$, and the total current $A + B = \frac{30}{1\frac{7}{8}} = 16$.

Fig. 3 shows a divided circuit with a third resistance, f, in the common leg. In this case the voltage v is not shown beforehand, but only the total voltage w. However, it is obvious that the current in the common leg is equal to the sum of the currents in the branches, and that the current in each leg is equal to the voltage acting over it divided by its resistance. Therefore $\frac{w-v}{f} = \frac{v}{a} + \frac{v}{b}$. Now in any actual example the numerical values of a, b, f and w are known. Substituting them in the last equation gives the value of v. Thus $\frac{62-v}{2} = \frac{v}{5} + \frac{v}{3}$ reduces to $v = 30$, from which we get at once $A = \frac{v}{a} = 6$, $B = \frac{v}{b} = 10$ and $F = A + B = 16$.

If merely the value of the total current F is desired, a neater method is to find a single resistance r equivalent to a and b in parallel, using formula (1) above, add r to f and divide the total voltage w by the sum. Thus $F = \frac{w}{r+f} = \frac{62}{1\frac{7}{8}+2} = 16$. This method may also be used to solve the problem completely, because having found the value of F the value of v may be found by multiplying F by r; thus $v = Fr = 16 \times 1\frac{7}{8} = 30$; after which A and B may be calculated as above.

Fig. 4 shows a divided circuit with a cross-path. It will be recognized as a Wheatstone bridge circuit in form, but unless the arms are balanced there will be a current in the cross-path. There is no short cut to the solution of this problem as there was to the last, because no two paths meet at both ends so that they can be replaced by an equivalent single path. The direction of current flow in a, b, c and d is obvious, but not that in e; and while it is possible to determine the latter at once from the relative values of a, b, c, and d in any actual example, it is unnecessary to go to that trouble, and it may be assumed to be downward; the result will prove the truth or falsity of the assumption.

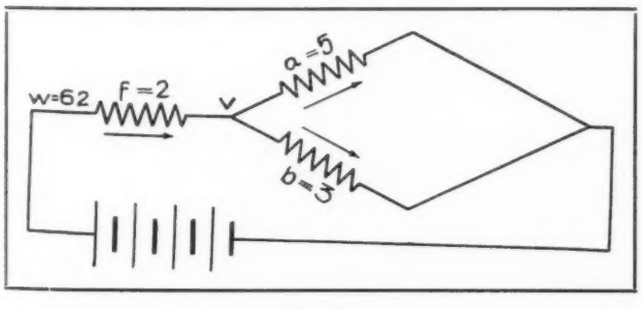


Fig. 3.

From what has gone before the following relations are self-evident:

$$A = \frac{v-x}{a}(2) \quad B = \frac{v-y}{b}(3) \quad C = \frac{x}{c}(4) \quad D = \frac{y}{d}(5) \quad E = \frac{x-y}{e}(6)$$

$$A - C - E = 0 \quad (7) \qquad D - B - E = 0 \quad (8)$$

Substituting the right hand members of equations (2) to (6) for the terms of equations (7) and (8) and clearing of fractions gives the following working equations:

$$cev - (ce+ae+ac)\ x + acy = 0 \qquad (9)$$

$$-dev - bdx + (be+de+bd)\ y = 0 \qquad (10)$$

This is the proper place to substitute the known numerical

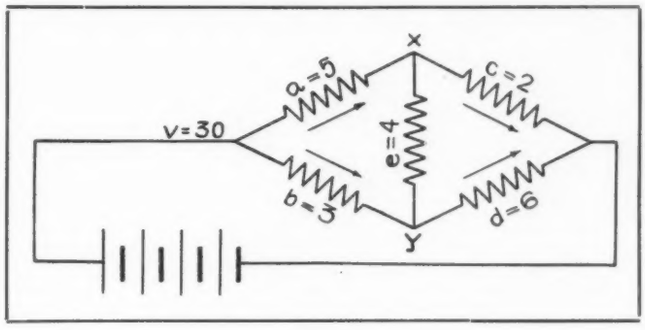


Fig. 4.

values of the actual example, which reduces equations (9) and (10) to

$$240 - 38x + 10y = 0$$

$$-720 - 18x + 54y = 0$$

These equations are now to be divided by 10 and 54 respectively, or else multiplied by numbers which will make the coefficients of y the same in both equations:

$$24 - 3.8x + y = 0$$

$$-13.333 - .333x + y = 0$$

Subtracting one from the other gives

$$37.333 - 3.467x = 0 \quad \text{or} \quad x = 10.77$$

Substituting the value of x in either equation gives $y = 16.92$.

Now that x and y are known all the currents may be found from equations (2) to (6), thus

$$A = 3.85;\ B = 4.36;\ C = 5.39;\ D = 2.82;\ E = -1.54$$

From the negative value of E it appears that it was a mistake to assume its direction downward, and that it is actually upward in the diagram. This is evident also from the fact that y is greater than x.

The correctness of the computations may be checked by substituting the current values in equations (7) and (8), keeping the negative sign with E, and further from the obvious relation $A + B = C + D$.

Fig. 5 is the same circuit as Fig. 4 with the addition of a resistance in the common leg, and is in that respect similar to Fig. 3. The short cut used with Fig. 3 is not available in this case, however, because the algebraic expression for a single resistance equivalent to a, b, c, d and e would be too cumbersome to work with. This problem may be solved by using the same equations as for Fig. 4 and adding to them the following:

$$F = \frac{w-v}{f} \ (11) \qquad F - A - B = 0 \ (12)$$

Substituting the right hand members of equations (2), (3) and (11) for the terms of equation (12) and clearing of fractions gives the following:

$$abw - (ab+bf+af)\ v + bfx + afy = 0 \qquad (13)$$

Substituting the known values in the working equations (9), (10) and (13) gives

$$8v - 38x + 10y = 0$$

$$-24v - 18x + 54y = 0$$

$$720 - 31v + 6x + 10y = 0$$

These three equations may be solved for the values of v, x and y as follows: Take the first and second equations and eliminate y as in the previous example, leaving an equation with v and x only. Do the same with the second and third equations. Combine the two equations in v and x in the same

manner so as to eliminate x and give the numerical value of v. Substitute the value in either of the equations in v and x to get the numerical value of x. Substitute the numerical values of v and x in any one of the equations in v, x and y to get the value of y. The results will be as follows:

$$v = 31.03; \quad x = 11.14; \quad y = 17.50$$

The currents may now be found from equations (2) to (6)

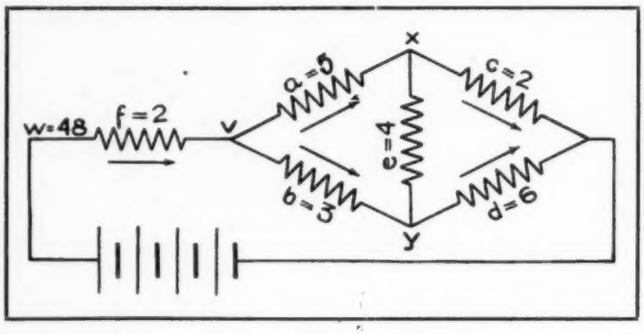


Fig. 5.

and (11) $A = 3.98$; $B = 4.51$; $C = 5.57$; $D = 2.92$; $E = -1.59$; $F = 8.49$.

The results may be checked by substituting the current values in equations (7), (8), and $A + B = C + D = F$.

Fig. 6 shows a still more involved circuit. Its solution is approached in the same way as the preceding one, expressing the current in each branch in terms of its resistance and the potential difference between its terminals, and equating to zero the sums of the currents at points v, x, y and z. In this way are obtained the following working equations, assuming the currents in both g and h to be downward:

$$cgv - (cg+ag+ac)\ x + acz = 0 \quad (14)$$

$$dhv - (bh+dh+bd)\ y + bdz = 0 \quad (15)$$

$$ghkv + hjkx + gjky - (ghk+hjk+ghj+gjk)\ z = 0 \quad (16)$$

$$abjw - (abj+bfj+afj+abf)\ v + bfjx + afjy + abfz = 0 \quad (17)$$

The known values are substituted into these equations, the equations solved for the values of v, x, y and z, and the currents calculated, in the same manner as in the previous example. The proper order in solving the equations is as fol-

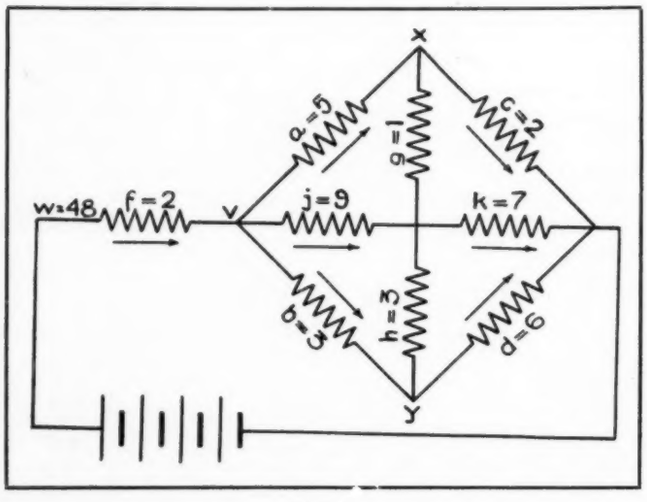


Fig. 6.

lows: Combine (16) and (17) to eliminate x, and the result with (15) to eliminate y, leaving an equation in v and z. Again combine (16) and (17), but this time so as to eliminate y; combine the result with (14) to eliminate x, leaving another equation in v and z. The two equations in v and z may now be combined to find the values of v and z, after which the values of x and y are readily found from (14) and (15). With the total voltage and the resistances as given in Fig. 6 the results are as follows:

$v = 28.70$; $x = 10.44$; $y = 16.28$; $z = 12.01$

$A = 3.65$; $B = 4.14$; $C = 5.22$; $D = 2.71$; $F = 9.64$; $G = -1.57$; $H = -1.42$; $J = 1.85$; $K = 1.71$.

If the common resistance f is not present, equation (17) vanishes, and it is only necessary to solve (14), (15) and (16), in which the value of v is known.

Examples of complicated circuits might be multiplied indefinitely, but the foregoing represent the principal cases occurring practically, and the principles explained may be used for any others. In a case where certain currents are given and some of the resistances or the total voltage are to be found, the necessary modifications in the method readily suggest themselves.

WHERE LANGUAGE FAILS.

I can scribble a tripping and tuny verse
On the nebular birth of the Universe;
I can spout at high tension
On Hyperdimension,
Or germs that about us all lurk.
I can spin you a treatise that's critical
On anything—social, political;
But my voice is dead beat
And my pen's without ink,
When I venture to treat
Of the people who think
That the telephone girl shirks her work.

Ye who deem she has naught in particular
To do at her board perpendicular
Save flies to be shooing,
Or gum to be chewing,
Or making a date with a "fel.,"
Instead of berating indignantly,
Should come and inspect her benignantly;
Come and see the whole game,
And if, after all that,
Your opinion's the same,
I will swallow my hat,
And the ribbon around it as well.

You will see where the calls she is sending to—
All the infinite work she's attending to;
It will render you dizzy
To see her get "busy,"
Or trunk the calls all over town.
And her neatness, her grace, her celerity,
Will make you forget your asperity;
And, after that same,
It will be mighty strange
If you do not exclaim
As you leave the Exchange,
"I will never again call her down."

I can talk to the verge of monotony
On calculus, physics or botany;
Where'er science reaches
I'll treat it in speeches
That rival both Webster and Burke.
No matter the subject discoursible,
I'll discuss it with eloquence forcible—
But I haven't a word
Fit for voice or for ink,
To describe the absurd
Indiwiddies who think
That the telephone girl shirks her work.

—Michigan State Gazette

Telephone Man Helps Organize Big Shooting Tournament.

A tournament of the Canandaigua Sportsmen's Club of Canandaigua, N. Y., held on May 27 is a testimonial to the activity, among others, of Mr. W. J. Kibbe, a telephone man who is well known to the readers of TELEPHONY, through his occasional lively contributions, and his invention of the telephone call registering device, covered by the patent reviewed in the January 1 issue of TELEPHONY. That the Sportsmen's Club, with which Mr. Kibbe is connected, is, like his telephone company, a live organization, may be assumed from the fact that in the last year it planted 10,000,000 fish fry, and liberated 20 pair of Hungarian partridge, besides exerting a helpful influence on the preservation of game and insectivorous birds.

British Telephone Notes

Latest Telephone Industry Statistics for the United Kingdom—What the Investor Gets—More About the English Channel Telephone Cable—Unusually Good Year's Business for Telephone Company of Egypt—British Sub-Postmasters Fear Extra Work from State Telephone Purchase—Big Increase in Telephone Revenue—The Phone as Thief Catcher—Municipal Telephony Making Poor Progress—More Mathemalical Knowledge for British Telephone Engineers—St. Petersburg Extends Its Service.

By Abercrombie

The most recent compilation of general electrical statistics in this country is contained in "Garcke's Manual of Electrical Undertakings," the current edition of which appeared on April 5. This is the fourteenth annual publication of the Manual. The total amount of capital invested in electrical enterprises in the United Kingdom is £1,950,180,000 of which private companies contribute £1,473,294,500 and municipalities £476,885,500. Altogether 1,387 enterprises are summarized and that progress is continuous from year to year is shown by the fact that when the first volume of the manual was issued particulars were given of only 172 enterprises with a total capital of £305,550,000.

The industry, like others, has felt the effects of the recent general commercial depression and will share fully in the recovery now fortunately taking place. Fifteen telephone companies and four municipal telephone enterprises are recorded, their total capital being £121,884,000. This is no change in number upon the twelve months, but is an increase in capital of over £11,000,000.

The telephone department is the smallest of the electrical groups, the next largest being the telegraphic section comprising thirty-two enterprises with an average capital of over £5,500,000 each. The telegraphic figures, however, do not include the Government telegraphs, although the State telegraphs are included in the telephone figures.

With regard to the yield to the investor who has his capital invested in electrical enterprises the average returns upon the Ordinary capital in telephone companies is 6.43 per cent; upon the Preference capital, 5.81 per cent; and upon the Debenture capital 3.89 per cent. The Ordinary capital return is second only to the yield earned by the investor in the Ordinary shares of telegraph companies. The Preference return to the shareholder is higher than any other electrical group, whilst the Debenture return is the lowest of any electrical group, the average being for other sections from 4¼ to 4½ per cent.

Shareholders in the Telephone Company of Egypt, whether owning Preferred or Deferred shares, will experience a feeling of relief to know from the dividend announcement that their distribution is to be maintained at the 10 per cent level at which it has stood since 1907. The slump in business activity in Egypt, coupled with the ominous fact that the interim distribution was at the rate of 4 instead of the accustomed 6 per cent, may very well have led them to form but moderate expectations of the year's results. The carry over is £211,500 whereas only £129,000 was brought into the accounts, and this fact will no doubt further whet curiosity for the appearance of the full report of what must have been, in spite of some adverse circumstances, an unusually good twelve months.

The National Federation of Sub-Postmasters was held on March 28th at Glasgow. There are 22,000 Sub-Postmasters in the United Kingdom and their perpetual grievance is their poor pay. It is to remedy this that the Federation has been called into existence. At the convention, in considering the extra duties that will probably fall upon Sub-Postmasters it was maintained that the taking over of the telephones by the government next year would probably mean additional work

The same approaching transfer has apparently led both the National Telephone Company and the Government's Telephone Department to be very sparing in the purchases of equipment and companies supplying this class of goods are suffering in consequence. Chairman Muspratt of the British Insulated and Helsby Cables Company, quoted this as part reason foı the poor trade of the company for the past twelve months.

It is old news now, of course, that the financial position of the United Kingdom is extremely confused and in many departments critical. The hanging up not only of the annual Budget for last year, but the new one that is also now due, is causing apprehension in many quarters. It is interesting to note, however, that the telephone service is lending relatively good support to the revenue. The total revenue from telephone service for the three months ended March 31st was £8,600,000, an increase of £1,050,000 over the corresponding quarter of last year.

An interesting use of the telephone here came out in some police court proceedings in April. A twenty-six-year old railway station thief has been secured after lifting property worth about £300 at Paddington railway station. The owner of the property arrived at Paddington station, placed his bag in a carriage, and left it there for a few minutes while he conversed with a friend. On returning he missed his bag and reported his loss to the authorities. Chief Inspector Matthews of the Railway Station Police, had recourse to the telephone and warned all the pawnbrokers of the London district that a bag had been stolen. Within a few minutes of the robbery the thief went into the shop of an Edgware Road pawnbroker and offered the property in pledge. One of the pawnbroker's assistants promptly gave the signal for another assistant to go for a policeman. The prisoner recognized this and bolted from the shop leaving the bag behind him. He was pursued and captured, and eventually sentenced, as an habitual railway station thief, to twelve months' hard labor.

It can scarcely be said that in this country municipal telephony is making any substantial progress. Oldham, in Lancashire, is the latest county amongst our boroughs to consider the policy of municipalising its telephone system. As the outcome of a question from the Hull Chamber of Trade, the Oldham Chamber of Trade is engaged with the corporation on the subject and has advanced the not very novel argument that the majority of the calls are local and that municipal management would be more economical, efficient and accessible. Furthermore, it is urged that in the event of a strike it would be better for the telephones to be in municipal hands. It is doubtful whether the association or municipal corporation which has the matter in hand will be particularly impressed by such arguments as these, and the chances of any wholesale reversion to municipal telephony in this country are remote.

In many quarters now the vast increase in the scope of telephony leads to widespread discussion of its various problems. It is being strongly urged in this country that in order to battle with these problems and explain matters telephone engineers must arm themselves with mathematical knowledge of a kind that was but rarely imparted to them as students, and it is therefore satisfactory to observe that in this country particularly Dr. Drysdale and Professor Fleming are directing

the attention of engineers to the importance of acquiring this knowledge.

One authority, recalling the Kelvin formula, which has in certain limits enabled telegraph engineers to predict the distance that can be traversed for any given design of telegraph cable, points out that this formula is only a particular case of a far more general relationship between the electrical work done upon a circuit from the sending end and the work used or lost in and around the whole length of the conductor, the dielectric, and the various instruments, when transmitting a given set of signals, and that moreover, in telephony the frequency of the current alterations is far higher and their sequences and combined values are far more complex than the fluctuations of the impulses that traverse a cable for purposes of telegraphy. On the face of it, therefore, it is clear that the more general relationship must be probed further in telephony than in telegraphy, if quantitative results are to be predicted, and if costs are to be controlled.

By something akin to a coincidence it happens that the general form of the telegraphic equation has a comparatively simple solution when ordinary trigonometry is augmented by the trigonometry of the hyperbola. It is obvious that, by similar methods, some of the unsolved problems in the transmission of power by alternating currents will be solved, and that a knowledge of hyperbolic functions will be essential for future electrical engineers.

According to the "Journal de St. Petersburg," of 23rd March, the Central Telephone Administration of St. Petersburg has obtained permission from the municipal authorities to use a sum of 2,835,000 roubles (about £1,500,000), in extending the telephone system and enlarging the central exchange so as eventually to serve 34,000 subscribers. The Administration, is, however, now desirous of providing arrangements for an eventual 45,000 subscribers, and have accordingly asked that the amount be increased to 4,846,000 roubles (about £2,550,000).

Mississippi Anti-Trust Case.

Attorney-General Hudson has returned from Water Valley, where he went to represent the state in the anti-trust case against the Cumberland telephone company.

This is known as the "Oxford case," and was instituted several months ago by the then Attorney-General J. B. Sterling. The hearing was before Chancellor I. T. Blount, the Cumberland being represented by J. B. Harris, of Jackson, and General Attorney Granberry of the Cumberland, with headquarters at Nashville. The chancellor announced at the conclusion of the arguments that he would take the matter under advisement, and his decision is expected shortly.

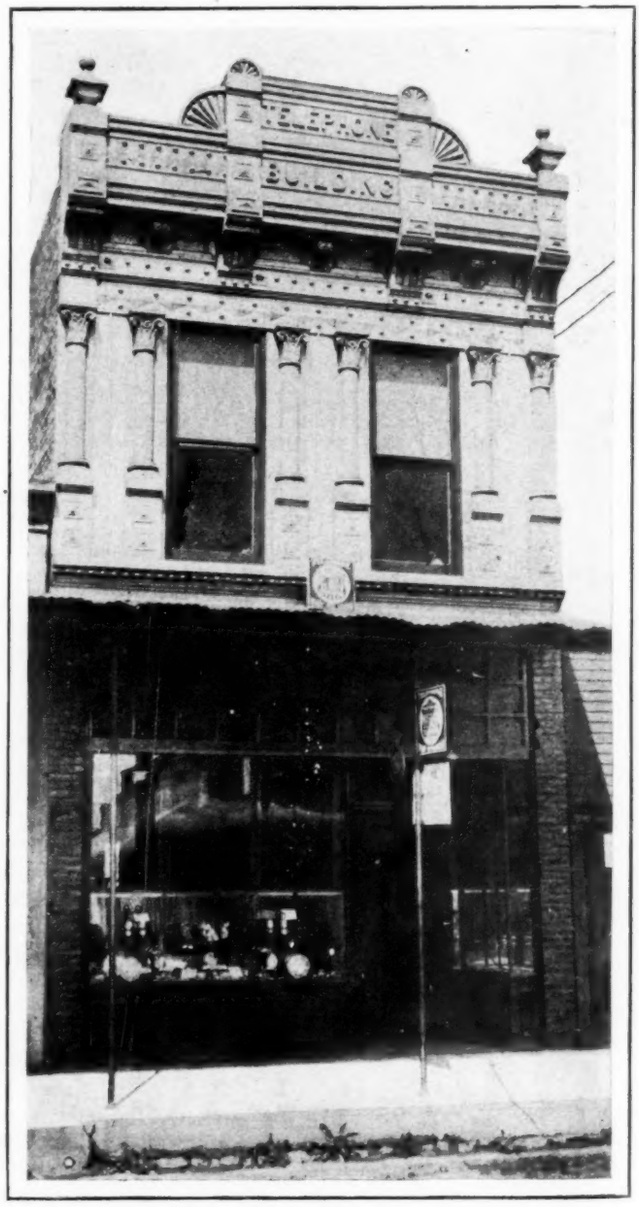
The allegation in this case is to the effect that the Cumberland entered into an agreement with the Oxford Telephone Company for the control of business at that point, in violation of the state law as to trusts and combines. Gen. Sterling looked into the matter very thoroughly before his retirement from office two months since, and was thoroughly convinced that the two companies had violated the law. The data he had secured was turned over to his successor.

Under the contract entered into between the companies at Oxford, the Oxford company was to turn its long-distance business over to the Cumberland for a consideration of 15 per cent on each message, and in lieu of that the Cumberland agreed that it would not enter Oxford for local business and that it would not do business with any other local company that might be organized.

An Exchange Owned by One of Missouri's Stalwart Independents.

The history of the exchange at Lockwood, Missouri, is typical of the best type of small Independent plants. The people of Lockwood were in need of an Independent exchange, but no one seemed ready to take upon himself the burden of conducting it for a considerable time. At last Mr. D. C. Clark, a watchmaker, came forward and started in the telephone business in a small way, without any previous experience. Without giving up his watch making business he has managed to build up a fine telephone property which has been steadily expanding.

The telephone office is located in the upper story of the building shown in the illustration, Mr. Clark's other business being conducted on the street floor. The outside plant is finely



Independent Telephone Building, Lockwood, Missouri.

built, and the workmanship would be a credit to an exchange many times larger.

Mr. Clark takes the keenest interest in all branches of telephony applying to an exchange of the size of his, and keeps thoroughly up-to-date. He always has time to join with his neighbors in a business-like discussion of telephone topics, and has been a sincere and faithful booster for Independent telephony, and has always shown a spirit of co-operation in district and state conventions. We believe he is a steady reader of TELEPHONY, and a cordial friendship exists between him and the paper.

Ideas of the Workers

Telephone Traffic Problems.

Traffic conditions in telephone work are being studied as never before, and there is every indication that the intelligent efforts now being expended will bring back a great reward in the form of better and cheaper telephone service, both local and toll.

The greatest gain will come through the standardization of the methods for handling conditions which may be considered as usual and standard This will be obtained through the interchange of ideas by the traffic men in different parts of the country, and the consequent adoption of those methods which experience has shown to give the best results.

The problems which confront a traffic student are many and varied. The handling of local or toll service entails the consideration of conditions caused both by the character of the plant and the personnel of the working force to be employed.

The expert traffic man aims to have enough equipment to take care of the present load and to provide for the growth which will come in a reasonable time in the future. He must calculate the loads so as to utilize the equipment provided in the most efficient manner possible. He must guard against excessive overloads for long continued periods and at the same time must take care that his force is not becoming demoralized through a lack of enough work to keep it busy. He must watch over the well-being and the mental condition of his force, as the matter of comfortable working conditions and a contented frame of mind has a great deal to do with the results obtained from the members of an operating force.

He must work out methods of handling special conditions with the idea always in mind of departing as little as possible from the standard and customary operating methods. Wide departure means increase of liability to error.

Among the first problems which an operating man is called upon to solve is the proper arrangement of the operators' hours. The importance of the correct handling of this matter especially in a large exchange cannot be overestimated. The schedule to be formulated must provide enough operators to handle the load at each hour of the day. It must do this without assigning any operator to hours which would work a hardship. It should provide not only enough operators to fill the necessary number of positions, but must take account of extra operators to relieve the regulars at stated periods.

It must also provide enough additional help to take care of the average number of absentees. If the schedule is made out properly one great source of future trouble will have been removed.

Another point of supreme importance is the teaching of new operators. The problem consists in taking girls who know absolutely nothing about a telephone switchboard and drilling them in the proper operation of the equipment, instilling in them at the same time a sense of the importance of their duties and of their relation to the company and to the public, and to do all this with the minimum of expense. Experience alone can show the best methods of obtaining the required results.

The matter of phraseology is a point to be carefully considered. A properly worded and adequate system of phrasing will make the ordinary routine of operation run very smoothly, whereas an ill-considered system will lose time for both operator and subscriber and will cause endless confusion and repeating. An ideal phrase must be brief, explicit and withal, courteous. One experience with making a phrase which exactly fits any certain requirement will convince the most sceptical that phrase-making is an art not to be despised.

A traffic man must be a ventilating and illuminating engineer as well as a traffic expert, for it is to him that his superiors look for information and suggestions which will guide them in the proper arrangement and furnishing of the operating rooms. The matter of proper light and air is a serious one Bad air and insufficient or poorly directed light can reduce the working efficiency of an operating force by 10 to 25 per cent.

Why It Pays to Look Up Credit of Prospective Subscribers.

"It is my opinion that when a telephone company receives an application for service," said a leading Independent operator of Kentucky to a representative of TELEPHONY, "he should be investigated almost as carefully as a bank which intends to make a loan investigates the personality of the prospective borrower. The cost of installing a telephone is so great that a loss may easily occur if the company is not careful. We make a rule of looking into the question of whether the applicant owns his home or is a renter; whether he is in the habit of moving frequently, and what his general financial standing is, and in case we are not convinced that he would be a good 'risk,' we decline to install the telephone. Sometimes the cost of making the necessary connections and extensions is great enough to warrant an unusually careful investigation, for the practical telephone man knows how easily money may be chewed up by a gang of men who are working on this end of the business."

A Blotter as a Business Getter.

The accompanying illustration shows a blotter issued by the Greene County Telephone Company, Waynesburg, Pa. On it seven matters of interest are called to the attention. As is seen they are prominently displayed, and gradually lead up to the fact that the Greene County Telephone Company desires to increase its business and to have satisfied customers. The trust issue is squarely presented, as it should be in all advertising of Independent telephone service—the public forgets,

INDEPENDENT
LOCAL AND LONG DISTANCE
TELEPHONE
"Look for the Shield"
Use the Elevator.
First THIS IS A GOOD BLOTTER AND DESERVES A PLACE ON YOUR DESK.
Second We are right in assuming that you are an independent American citizen and in accord with the President as a "Trust Buster".
Third We can produce to your satisfaction evidence that the Telephone Trust is in absolute control of the Local Telephone System which was built by and through the efforts of Independent Telephone Men in southwestern Pennsylvania and by the farmers of Greene county.
Fourth The local company is under a contract with the Bell company to raise the rates for telephones in Waynesburg to the Standard rates charged by the Bell in other places. In Washington they charge $54 a year for Business Telephone service in Washington only, and have 200 telephones less than they have in Waynesburg. YOU KNOW that a start was made to raise the rates and to cut down service. This move has been checked by the persistent efforts of the Greene County Telephone Company to obtain a franchise in Waynesburg. Shall there be competition or a monopoly? It's up to you.
Fifth Every dollar to build the Greene County Telephone Company's system is supplied by citizens of Waynesburg and Greene county.—We own our telephones, poles, conduits and wires. We can be liberal without asking permission of the Bell Co. We earn and spend our receipts, not a commission on them.
Sixth Seven hundred subscribers in Waynesburg have signed contracts to use this company's service. Are you with us? Come, ride in the band wagon. Don't follow the procession.
Seventh Come and see us. Use our service to Carmichaels, Uniontown, Pittsburg, Johnstown, Wheeling, Cleveland, Columbus and many other points. We will treat you liberally. No satisfaction, no charge. Open an account. We will discount it for more than the other fellow gets as his commission from the trust.
GREENE COUNTY TELEPHONE COMPANY,
Room 406 Grossman Building, Waynesburg, Pa.

A Blotter Designed to Attract Attention to Independent Local and Long Distance Service.

The Greene County Company is now managed by Mr. H. C. Larrabee, an expert telephone man who has had a successful experience in many parts of the country. He can be relied on to get business where there is any to get, and to give the kind of service that holds subscribers.

No Bad Pairs in Topeka Independent Cables—Cost of Clearing.

At the time of the Kansas convention the Editor of TELEPHONY visited the exchange of the Topeka Independent Telephone Company, and among other interesting things learned that the maintenance men had been engaged in a steady and systematic attempt to clear up all bad pairs in cables. They started with sixty pairs ahead of them, and had worked this number down to three at the time of the visit.

Now Mr. H. E. Davis, superintendent of operating and equipment, announces that this work has been completed, and forwards the following report, giving valuable details.

"I wish to submit for your consideration the following report, which relates especially to the cost per pair of clearing all the bad or 'lost' conductors on the Topeka plant.

"While there have been times when the number of bad conductors was very low, there has not been a time when all the pairs were available for use.

"This plant is not equipped with an elaborate set of cable testing instruments, but the equipment is adequate, and has proven very satisfactory as I believe will be apparent when the following report is carefully considered:

Total number of cable pairs terminated in this office	4450
Total number of bad pairs on the entire cable plant at the time this work was started	60
Total number of pairs "grounded"	11
Total number of pairs "short circuited"	13
Total number of pairs "open"	20
Total number of pairs "crossed"	16
Total	60

COST.

Cable man on this work 41 days	$133.25
Cable man's helper on this work 41 days	61.50
Lead sleeving used	20.00
Tape	2.29
Wiping solder, 55 pounds	12.65
Paraffin, 16 pounds	1.32
Paper sleeves, muslin, and miscellaneous items	5.00
Horse and wagon	30.00
Total cost	$266.01
Average cost per pair	$4.43

All Cable Conductors Into the Office are Now Good.

Remarks.—Wire chief's time spent in making measurements and directing the location of faults is not included in this report, the work being done in addition to his usual duties.

"No matter how accurate the measurements may be, or how thoroughly they are checked up, much depends on the judgment of the cableman, and due credit is extended Mr. Nichols who handled this work on the outside.

"(Signed) W. E. Nottorf,

"Assistant Superintendent Operating and Equipment."

Mr. Davis mentions, in connection with the report, that it was found the personal equation entered into the work of clearing these pairs as much as did the bridge measurements.

He puts this clearly enough, but somewhat uniquely, in the statement that the clearing of these pairs was completed by the combination of a man with a Wheatstone bridge, a man with an exploring coil, and the man himself. It was found that while it is not impossible to locate a case of trouble to a definite point, that it is impracticable to do so. This is due, undoubtedly, to the very great number of twists, crooks and short bends which are, obviously, not a matter of record and cannot be figured on by the man making the measurements, and so throw off the test a few feet on a long cable. In addition to this one has to take into consideration the temperature, and also the twist of the conductors in the cables.

It is interesting to learn that of the several opens cleared, most of them were located with about the same proportion of exactness as were the grounds and crosses.

This record of results shows clearly enough that it pays to clear up the bad pairs, and that unless there is some very unusual condition, a completed job can be made at an economical figure, if one goes at the work intelligently and with the proper spirit.

It would be too bad to leave this subject without commenting on something which at first thought may not seem to have much to do with the cost of clearing cable trouble, but which may be found to be quite a factor in the efficiency of doing the work after all. Mr. Davis in his letter enclosing the report says: "All this work was done under the supervision of Mr. Nottorf, who is my assistant." In the report from Mr. Nottorf it will be observed he mentions the credit due Mr. Nichols, who was the cableman on the job.

Topeka is a place where the people in the company are big enough so that each one realizes that theirs is a job which will take all their combined efforts to handle the business in the best possible manner, and that they must help each other to grow. This spirit, with the idea that no man must stand in another's way, is bringing out the best points of individual character of the people in the organization, and making it one of the best in the country.

Construction and Maintenance of Farmers' Lines.

The difficulties of inducing farmers who build telephone lines to erect substantial poles, either chestnut or cedar, from twenty to twenty-five feet in length, with six inch tops, with the bark taken off and well set in the ground, and to use the very best B. B. telephone wire are mentioned by Mr. N. C. Watts in a paper read at the convention of the Georgia Independent Telephone Association.

Mention of the equipment which he recommends shows that Mr. Watts is not as well posted on judging telephones and switchboards as some of the western telephone men. Other parts of his paper, however, are interesting, and his suggestions might be followed to advantage, as the following:

"The farmer's lines are beneficial to both city and county in many ways. For instance, many more telephones can be secured in small towns where direct telephone communication with the country is secured. Then the city merchants can communicate with the country produce people, and likewise the country people can keep up with the markets and transact much of their business between country and city by telephone. In case of sickness and other urgent need the telephone has proved invaluable, and has often been the means of establishing a cordial feeling between country and city people. I believe that the value of the telephone is even greater to the country than to the city subscriber. In order to appreciate what it might mean to both the country and city subscriber, imagine for a moment the result of the discontinuance of the telephone service for only a day.

"It is a fact known all over the country that as the number of telephones increases, so does the cost of operating each instrument. Many persons may find it hard to credit such a statement, as it is not the usual business principle that the increasing volume of business will also increase the average cost. It must be borne in mind, however, that it is the accumulation of calls of a large exchange over a small one that is directly responsible for the increase in cost. When I had 300 subscribers three operators did the work, two during the day and one at night. But now we have eight hundred subscribers and it takes fifteen operators to handle the business and outside labor in proportion. It is much like the old saying that if you should ask your blacksmith to shoe your horse for a cent the first day, and double the amount the next day, each day doubling the amount of the past day, it would soon impoverish the most wealthy."

Rate Regulation at Los Angeles

The First Instance of Municipal Regulation, Supplementing Well Established Competition—Practical Results, Equalization of Rates, An Incentive to Good Management.

If the recommendation of the Los Angeles public utilities commission is followed, the city council will readjust telephone rates as follows:

Raise business rates, Home and Bell, from $5 to $6 per month.

Raise residence rates, Home, individual line, from $2 to $2.50 per month.

Reduce residence rates, Bell, individual line, from $3 to $2.50; two-party line, from $2.25 to $2; four-party line, unchanged, $1.50.

The public utilities commission places both companies on an equal basis, and makes the charges for each system the same.

Rates are left unchanged for those portions of Los Angeles city at Gardena, Wilmington, San Pedro and Terminal Island.

Charges for extensions, extra names in the directory, and other extras are left as they are.

The difference in charges for desk and wall telephones on party lines is abolished, except in four-party lines, where the rate of $1.50 for wall telephones and $1.75 for desk telephones is proposed.

No distinction is made between desk and wall telephones for unlimited business connections.

The net effect of the rates will be to give the Home company an increased revenue of between $100,000 and $200,000, while the Bell income will remain about as it is at present.

The recommendations of the utilities commission are explained at length in the following communication, giving detailed reasons for the changes proposed:

"To the Honorable City Council—Gentlemen: The board of public utilities herewith respectfully presents its report and recommendations on telephone rates for the city of Los Angeles for the ensuing fiscal year.

"Before entering into a discussion of telephone rates, it is well to indicate some facts which affect the cost and operation of large telephone exchanges.

"It is a well known fact among telephone engineers, that as a telephone exchange grows, the cost of furnishing telephone service over the entire system to each patron increases. This increased cost is due to several causes.

"As the exchange increases in size, it becomes necessary to replace small poles with larger ones, and to install underground conduit and cable, and the average length of line a subscriber increases with the growth of the exchange. The number of operators must be increased to handle the necessary traffic. As the number of operators increases it becomes necessary to duplicate the switchboard equipment enough times so that each operator may have each 'number' within reach. By way of example:

"A switchboard for an exchange of 100 or 200 lines will cost about $2.50 a line, while one for 10,000 lines will cost from $20 to $25 a line.

"About 10,000 or 12,000 lines is the maximum number which can be connected to one switchboard. When an exchange becomes larger than this number, it becomes necessary to build other exchange offices and connect them with expensive trunk cables.

"Real estate, buildings, taxes salaries and wages are proportionately higher in large cities, and larger expenditures are required to reconstruct and remodel the plant to keep pace with the growth of the city and the public demand for city improvement.

"In a large and rapidly growing city, it is absolutely necessary to provide a large proportion of facilities in advance of demand, owing to the fact that in small towns the degree and direction of growth can be more accurately predicated.

"The average total investment varies from about $50 a telephone in exchanges having several hundred or a thousand subscribers, to about $100 or $150 a telephone in exchanges having 20,000 subscribers or more.

"The cost of operating a large exchange increases, owing to the need of many nonproductive operators and employes, such as monitors, trouble clerks, chief operators, information operators and supervisors, which are not needed in a small exchange.

"The data regarding the physical valuation of the property upon which this report is based, was collected by W. F. Sloan, telephone engineer of the railroad commission of Wisconsin, under the direction of the engineer of this board.

"Mr. Sloan has made a careful check of the inventories of the physical properties of the two companies doing business in the city of Los Angeles, and as the result of his work we append hereto schedules showing his valuations of the main classifications of the property of the two companies. The total for the Pacific Telephone and Telegraph Company (Sunset company) is $4,398,934, and for the Home Telephone and Telegraph Company is $5,063,726. This valuation includes the usual 20 per cent above cost, on lines, cables, conduit, equipment and buildings to cover engineering, superintendence, interest and contingencies during construction.

"The companies' claims for plant valuation, exclusive of franchise, were: Pacific Telephone and Telegraph Company, $5,295,482; Home Telephone and Telegraph Company, $5,639,639. In addition to these figures, the Pacific company claimed $1,101,345 and the Home company $1,364,000 for franchise valuation, neither of which items were allowed by us.

"On December 31, 1909, the Pacific Telephone and Telegraph Company had approximately 37,000 telephones in use in the city of Los Angeles, and the Home Telephone Company approximately 35,000.

"From these figures it becomes evident that each of these companies is doing substantially the same amount of business. There is a great discrepancy, however, between the operating expenses claimed by the Home Telephone Company and those claimed by the Pacific company: The Home company claims approximately $436,000 for their operating costs for 1909, while the Pacific company claims $751,000 for the same item.

"In the case of the Home Telephone Company, however, its plant being purely local, this item is reduced to mathematical exactness, assuming that their statement is correct; while, in the case of the Pacific company, the figures claimed for operating expenses are made up largely by apportioning to the Los Angeles plant a proportion of the general operating expenses of the entire Pacific Telephone and Telegraph Company, which operates in several of the Pacific Coast states.

"In arriving at our recommendations as to rates for the ensuing year, it has been our aim to allow 6 per cent for interest on the actual physical valuation of property as above given, and 7 per cent for depreciation and obsolescence.

"By depreciation is meant that unavoidable deterioration in the value of the physical equipment and plant, which is due to wear and tear and to the hand of time. It should be carefully distinguished from that loss in value which is covered by maintenance. A machine or piece of apparatus may receive the best possible care and maintenance, and yet steadily depreciate in value, and in time must be replaced. In time equipment becomes obsolete or unprofitable to use, long before it has reached the limit of its wearing life, on account of the rapid improvements and inventions which are constantly being made. Again, equipment is very often rendered useless and must be abandoned because of the fact that it is no longer adequate for the purpose for which it was designed, especially when the growth of the plant and system is as rapid as that in Los Angeles.

"The history of telephony has shown that telephone switchboards must be replaced by larger and improved types, in from five to fifteen years, and generally, it is well established in telephone engineering, that a much larger percentage for obsolescence must be allowed than in almost any other public utility. For example: On account of the necessity of dismantling one switchboard alone the Home Telephone Company has suffered a loss of more than $150,000.

"The Home Telephone Company should, in order to receive a return of 6 per cent on the investment and a 7 per cent allowance for depreciation and obsolescence, have a gross income of approximately $1,043,000 a year. As a matter of fact, the statement of that company shows that its gross income for the last fiscal year amounted to only $870,000, showing an apparent deficit of about $173,000.

"This is not surprising, and is accounted for by reason of the fact already stated concerning obsolescence and the increasing cost to the company of giving telephone service on account of the remarkable growth of its business. It, therefore, becomes at once apparent that in order to do justice to this company, its rates must be adjusted so that a substantial increase of about $173,000 in its gross income may be earned.

Pacific Company Not Entitled to Higher Operating Costs.

"In the case of the Pacific company, if they were allowed $751,000 as claimed by them for operating expenses, 6 per cent for interest and 7 per cent for depreciation and obsolescence, their gross income would have to be approximately $1,283,000, whereas their gross income as given by them amounts only to $931,500, an apparent discrepancy of $351,500.

"The board of public utilities, however, is not disposed to recommend differential rates for the two companies, seeing no reason in the nature of the case why the Pacific company should not be able to do business on as favorable terms as the Home company, and we therefore recommend that the rates for similar classes of service for the two companies should be the same.

"We have given the matter of proposed rates for the two companies very careful consideration, and have to propose that the following rates be established for all parts of the city of Los Angeles for the ensuing fiscal year, excepting the territory formerly known as San Pedro, Wilmington and Terminal Island.

Rates Recommended.

"Residence telephones (unlimited service)—One-party line, desk or wall equipment, $2.50 a month; two-party, desk or wall, $2; four-party, wall, $1.50; four-party, desk, $1.75.

"Residence telephones (measured service)—One-party service, $2 a month, 50 messages included in rate, charged for excess messages, 2 cents.

"Business telephones, unlimited service—One-party line, desk or wall, $6 a month; two-party line, desk or wall, $4.50; four-party line, portable, $3.50; four-party line, wall, $3; sending lines, $4; receiving lines, $3.

"Business telephones, measured service—Class of service: one-party, rate a month, $4; number of messages increase in rate, 60; charge for messages in excess of number increase in rate, 3c. Class of service: one-party, $5; number of messages, increase in rate, 100; charge for messages in excess of number, increase in rate, 2c. Class of service: sending line, $2; number of messages, increase in rate, none; charge for messages in excess of number, increase in rate, 2½c.

"Extra charges—For extensions, $1 a month; for bells, 25 cents a month; for extra names in directory, 50 cents a month.

"Private branch exchanges—Trunk lines, $6 a month; stations, $1 a month.

Increase for Home.

"Those proposed rates, if adopted, would give the Home Telephone Company an annual increase of revenue sufficient to approximate operating expenses, 6 per cent interest on our valuation of plant and 7 per cent for depreciation and obsolescence; while for the Pacific company they would give very little change in the revenue produced at the present schedule of rates.

"We understand that the rates in force in San Pedro, Wilmington and Terminal Island are substantially lower than the existing rates in other portions of Los Angeles or those proposed by us, and we therefore recommend that no change be made in the prevailing rates in those parts of the city of Los Angeles, which rates are as follows:

"San Pedro, Wilmington and Terminal Island—Home Telephone Company: Main line, business, $2.75 a month; main line, residence, $1.75; two-party line, business, $2.25; four-party line, residence, $1.60. (25 cents rebate if paid before 10th of month.) Pacific Telephone & Telegraph Company, San Pedro and Terminal Island: Main line, business, $2.50 a month; two-party line, business, $2; main line, residence, $2; two-party line, residence, $1.50. Wilmington: Six-party line, wall, for all classes of service, $1.50.

"The Consolidated Utilities Company of Compton operates Home telephones in that portion of the city of Los Angeles in the vicinity of Gardena, charging the following rates, which we recommend be established for the ensuing year: Party lines, $1.50 a month; private lines, $2.50 a month.

"We further append hereto for your information and for comparison a schedule showing telephone rates charged in some other cities in the United States, in the same general class with Los Angeles.

"We also append a schedule showing present and proposed rates for Los Angeles, with the approximate number of telephones in each classification in use last year by each company. Respectfully submitted,

"Board of Public Utilities."

Appended to the foregoing report, the utilities commission submitted to the council tables showing the valuation of plants and equipment of the two companies, comparative rates charged for service in principal cities, and a comparison of present and proposed rates, with the number of telephones affected by each change in rate.

The appraisement of plant value for the Pacific Telephone & Telegraph Company, as determined by the public utilities commission, is $4,398,934. The company, in its statement filed last January, fixed the plant value at $5,295,482, with an extra $1,101,345 claimed as franchise value.

The Home plant value is fixed by the utilities commission at $5,063,726. The company fixed it at $5,639,639, with $1,364,000 extra for franchises.

As TELEPHONY *goes to press a report is received from Los Angeles that the council rejected the recommendations of the Public Utilities Commission for a raise in rates. The rates now in force were re-enacted with minor changes that will mean a slight reduction in gross receipts for both companies. Details will be published next week.*

What the Law Decides

Conducted by A. H. McMillan

A Question in Rates.

Our terms have been that when a sufficient number from one neighborhood to form a new line (16 to 20) have applied for service, they pay $19, furnish 15 poles and pay for the extra wire to reach from the switchboard to the first member on the line, provided the company will not go over one-half mile to get a member, put the line up and pay 15 cents per month thereafter. Stock is all sold. What would be a fair proposition to others now who would have to come in as subscribers?

This question is one that should be asked of the business department of some going telephone company in your state, rather than of the legal editor. However, we will give our view of the matter and let it be used for what it is worth. We would suggest that to the $19 required of your members, you add the cost of 15 cedar poles, the extra wire required and the cost of erection, and take 30 per cent of the total. Add this 30 per cent to the total of the yearly rate required of your members and use the sum as a basis for the charge to your subscribers. We base this suggestion upon the supposition that $19 plus the cost of the poles, extra wire and erection, represents the investment required of your company to take on a new telephone. We use 30 per cent because we think that 10 per cent per year should be allowed for depreciation of poles and wire and as interest on the $19. An additional 20 per cent. is added as profit and to provide for unforeseen contingencies. We suggest this as the principle to be followed in view of your present rates to stockholders, rather than as an accurate schedule of rates. Of course the final result is to be apportioned among the subscribers on the line or charged to the line collectively in accordance with your policy.

We will say further that if you are going to give even fairly good service, and figure properly on depreciation, you will have a big deficit every year. It would be well to go over the costs of operation and maintenance, not merely of one system the size of yours at present, but of one as large as yours is likely to be in five years, when the cost per telephone will be much higher, with the manager of some well handled near-by company, and figure out what rates you will have to charge to get on a living basis. Then take your renters in at a rate that will be fair to your company, as well as to themselves. It costs cash and cuts down your income every time you take out a telephone. You don't want to go on for several years, and then wake up to find that in addition to losing on operating every year you must face further loss and dissatisfaction due to a necessary raise in rates.

Impairing Obligation of Contract.

A bill in equity was filed in the United States Circuit Court for the purpose of enjoining the town of New Decatur, Ala., from interfering with the telephone system of the American Telegraph & Telegraph Company and from instituting legal proceedings in the state courts to enjoin the plaintiff from operating, maintaining and managing its telephone system. The action of the town complained of and sought to be restrained, was contended to be a violation of the constitution of the United States by impairing the obligation of contract and depriving the company of its property without due process of law.

The bill of complaint averred a grant to the company by an ordinance on June 7, 1898, of a franchise to occupy the highways of the town, subject to supervision and regulation under the police power of the municipality; the acceptance of the grant by the company, the construction of poles and wires in the highways and their use for a period of about six years. It was further averred that on March 14, 1904, the town adopted an ordinance for the purpose of repealing the franchise and later another ordinance providing for the removal of the poles and wires from the highways, and in default of such removal by the company directing their removal by the municipal authorities, the ordinance also declaring the maintenance of the poles and wires a nuisance.

The preliminary injunction prayed for by the complainant, was denied, the court holding that impairment by a state of the obligation of a contract, must be by legislation subsequent to the making of the contract, enacted either directly by the legislature of the state or through delegation by one of its municipalities. General and implied powers arising out of the charter of the city, were held not to constitute such legislative authority. Further, it was held that the mere repudiation of the contract, by a municipal corporation, or a denial of liability on such contract, did not constitute an impairment of the obligation of contract under the clause above mentioned. The court therefore held that, as a federal tribunal, it had no jurisdiction of the suit before it. American Tel. & Teg. Co. vs. New Decatur, 176 Fed., 133.

Discount Ordinance to be Tested.

Formal announcement has been made that the Southwestern Telephone & Telegraph Company, at Dallas, Texas, would take steps to test in the court the legality of the so-called "referendum" ordinance, approved by the votes of the last city election. This ordinance provides, among other things, for a discount of 10 per cent. on all bills if paid before the tenth of the month, such bills to be rendered on the first of the month following that during which service was rendered. The president of the company gave out the statement that the deduction of 10 per cent would so greatly curtail the revenues of the company that it was impracticable for the company to comply with its provisions. The company announced that it would proceed promptly and in the meantime would follow its ordinary rule of disconnecting service from the telephones of persons who did not pay their bills. If the courts finally hold the ordinance valid, the company states that it will refund the discount to those who promptly pay their bills. This refund is to be made whether or not the bills are paid under protest.

A Short Opinion.

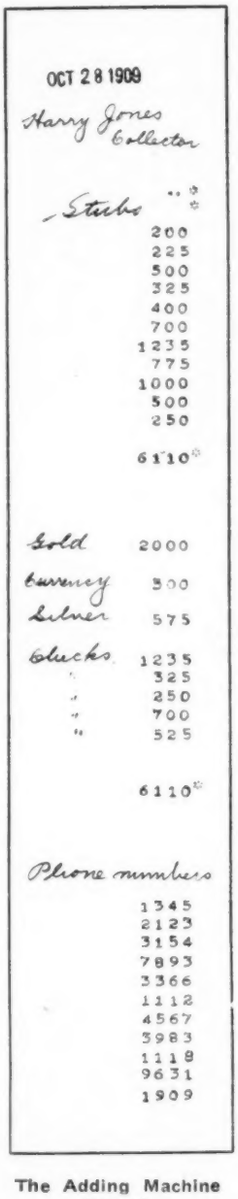
The state of Texas has lost its suit to compel the Western Union Telegraph Company to take out a permit to engage in business in Texas or to be ousted from the state in so far as local business is concerned. To take out a permit would cost the company $100,040, based on its capital stock of $100,000,000. The trial and appellate courts held that the state could force the company to secure a permit to engage in local business in the state, although it needs none to do an interstate business or handle government messages. But in this decision, the entire case goes against the state on the grounds given by the Supreme Court of the United States in defeating a similar action by the State of Kansas. The opinion is short and to the point. It says: "Since this suit was brought to the court, the Supreme Court of the United States, in the case of the Western Union Telegraph Company vs. State of Kansas, has ruled that a similar law of Kansas is unconstitutional. This renders unnecessary any discussion of the questions involved in this suit. Upon the authority of the case cited, the judgments of the district court and of the court of civil appeals are reversed and judgment here rendered for the Western Union Telegraph Company."

Cutting Down Work and Expenses by Using an Adding Machine.

An adding machine can be put to so many different uses in the course of the day's business in a telephone office that it is a hard matter to enumerate them all.

The assistance it gives to a bookkeeper hardly needs mentioning. To any one up against the proposition of adding two or three dozen columns, say of fifty lines each, and running well up into the tens and even hundreds of thousands, the machine is a more than welcome assistant.

Suppose a company has a dozen collectors who turn in from fifty to one hundred accounts daily, with at least one-half of the bills paid by check. The cashier has a fine prospect in front of him the next day, when it comes time to make up the deposit for the bank. Whoever saw a deposit slip long enough to enumerate all the checks of even the smallest day's business? The banks are just as anxious to receive a deposit listed on the adding machine as on any other form, and the cashier is able to list the items and get his total at the same time. The collectors can also list their collections on the machine, giving not only the amounts of the bills and the total, but can also show the checks, cash and bills and the telephone numbers as well. This slip can be filed for reference, and in case of a dispute absolute evidence of payment or non-payment is had. This is one of the unique ways in which the adding machine can be used, and a small sample is shown.



The Adding Machine Record.

Property Owner's Rights, Line Order Service and Conduct.

As the property owner's and subscriber's money is in your pay envelope, and as you are the one who deals with him directly, not your officers, it all depends on the impression you make with him, as to his attitude towards the company, says Samuel Abernethy in the Michigan *State Gazette*. Show him respect, and when working on his property, treat it as your own. If he has an idea of how he wants the drop run, put it that way providing your judgment teaches you that it will not interfere with service; if you can't, tell him why. Never leave him dissatisfied with your work.

Make as little noise as possible, work as though there was sickness inside; cut out all loud talk, hollering at each other, tramping on the flowers, grass and rose bushes. Put a little board under the ends of your ladder when on his lawn; avoid pulling your wires over his clean clothesline; be careful of the shingles on his barn, and lock his gates when you are through. Pick up the wire clippings you dropped in his grass and then he won't curse you when he picks them out of his lawn-mower. When on his roof keep your spurs off, walk near the walls, as it is firmer and lessens the sound to those underneath. The first question a roofer asks a property owner when he complains of his roof leaking is: "Have you been getting a telephone put in?"

When crossing the neighbor's property, get your drop up in the air as quickly as possible; many a piece of property was never crossed because the wire lay over the fence too long. Experience has taught me never to argue with a Dutchman about crossing his property; if he says "no" that settles it; proceed to set poles or build your line around another route. You might change other nationalities with a good line of talk, but a Dutchman—No!

Keep your wires to the rear, if possible; give them a good spread, two brackets are better than one, and run the best insulation to basement windows. Put in enough screw-eyes to keep it from flapping against the building and annoying the subscriber. Make it handy for the installer and inspector, and put it there to stay. Keep it up, to a good height, and avoid all windows, awnings, porches, eaves troughs, gates and coal windows as much as possible. Get your truck around where you can work on the lead and drop at the same time, and you won't have anybody idle; neither will people be tripping over your wire in the street. When getting off from your truck, take a peek around the side of the house at the basement and also the attic; see which property line your pole is on and then you won't be running back into the house again.

Keep your lead straight, guy your arm and have an eye out for hay-loft doors. Build every line as though you were the subscriber and were getting it put in for sickness in your family. Practice quality first; then go after quantity.

Scrape your fuse springs; leave your jumpers a little slack in your box for cut-overs and learn to keep your feet still while sitting on pole seats with spurs on; some of these cable caps look like nut-graters. Go in on every line you intend to cut, for there are many people using long distance, calling doctors, and dropping their nickels in pay stations every day. Use the conductors with more than one jumper, one to do your talking, and then you won't be ringing straight line bells and annoying subscribers. Keep in mind the operator when using the fuse-wrench, connecting up jumpers, cutting twin wire or working on the lead, for every tick is a gash, and then you won't have a plug in your line when you come to test it. Put your tracer on the odd conductor and the odd pin and it will save time and trouble.

Keep your think tank working all the time; use your own judgment, and remember that the men over you have plenty to think about without being pestered with minor incidents. Your occupation is not like the majority of trades; it puts you upon the highways before the public all day long, and one ill-timed act on your part reflects on the whole.

Try and keep yourself as neat and clean as possible, even if you haven't got an ink-slinging position. Remember that lace curtains have eyes, walls have ears, and that there are very few minutes in the day when you are free from observation. Remember that the officers of the company, the stockholders, their relations and friends, don't all live on one street, so conduct yourself so as to command the respect of all.

Liquor and aerial work never worked in harmony, and today the Booze Fighter and Bum Element have been eliminated from the ranks of those who are in the employ of telephone companies in the departments handling construction and installation work.

Virginia Legislature Adopts Statute Regarding Language Used Over Telephone.

Reports from Virginia give a statute which was recently passed by the Legislature. The enactment reads as follows: "Be it enacted by the general assembly of Virginia, that if any person shall curse or abuse anyone, or use vulgar, profane or indecent language over any telephone in this State, he shall be guilty of a misdemeanor, and, upon conviction, be punished by a fine of not more than one hundred dollars."

Telephone News

North Dakota Convention, Minot, July 18, 19, 20.

Illegal Merger Attempted in New York.

A merger deal is being attempted by the Wayne-Monroe (Ind.) and Bell interests, affecting territory in the eastern end of Monroe County and most of Wayne County, on the east side of Monroe County, New York. The Wayne-Monroe has about 3,000 telephones and connects with the Rochester Independent lines for long distance service.

H. P. McDonough, of Newark, has been manager of the Wayne-Monroe and has been actively engaged in promoting the interests of the Bell in bringing about the merger. The plans of the men in the new deal embrace uniting the Independent and Bell exchanges in several villages.

As nearly as can be gleaned through the veil of secrecy over the merger, a newly-incorporated company is to control a majority of stock in both Independent and Bell companies operating in the Wayne-Monroe's territory. The incorporators are Frank D. Gaylord, of Sodus; Willis P. Rogers, of Williamson; George F. Waters, of Pultneyville; D. J. S. Brandt, of Ontario; Albert Yeomans, of Walworth; D. P. Osborn, of Ontario Center; and H. P. McDonough, of Newark. The new company is said to intend making use of both Bell and Independent long distance lines.

As the Public Service Commission has not yet acquired control of telephone and telegraph lines this deal will not have to be approved by that body. The deal was rushed to avoid investigation by the Commission. However, the Donnelly anti-trust law is applicable to the merger and also provides a penalty of $5,000 for each violation. The incorporation papers of the new company have been filed, and the moving powers think the deal is closed.

Kansas Independents Indignant at the Hutchinson Sell-Out.

The purchase by the Bell telephone company of the formerly Independent exchange at Hutchinson, Kan., close on the heels of the Wichita deal, has made Independent telephone men justly indignant. They see a plan to gather in some of the main cities, and then turn around and squeeze the owners of the small cities and toll lines until they agree to connect with the Bell company on its own terms. It is well known that only recently the Bell company has been trying to get some comparatively isolated companies to sign a sublicense agreement, involving the payment of $2 a year for instruments, although in sections where there is no competition this type of hold-up contract was abandoned long ago. Kansas local companies see in this a warning of what would happen if they were at the mercy of the trust, and are anxious to see some binding, legal organization, which will hold the properties together, as they are now in Nebraska and Michigan.

The following abstract of a letter, from a fair-minded Independent, is probably typical of the general feeling:

"A man has a right to sell his own property, I suppose, to whomever he wishes. But Burns, the Hutchinson Independent man, played us a scurvy trick when he sold to the Bell without first giving his brother Independents a chance to buy. If he was forced to dispose of the property, or merely wished to do so in order to take up some other business, he might have notified other Independent operators, who were interested in keeping their splendid foothold in this territory, thereby placing them in a position to protect their own interests, which he has now so basely disregarded.

"A well-built toll line extending down the Rock Island to Guymon, Okla., has lately been completed, giving all towns in that direction first-class toll connections to Burns's exchange; and from there direct to Kansas City. The B. & B. (Burns & Burns, father and son) owned a fair share of stock in both the Guymon and Kansas City lines, which stock is now owned by the Bell. All that southwest territory is strongly Independent, and you can well imagine their feelings when they found that their new line, from which they had expected so much, was sawed off at Hutchinson and run into a Bell office. The same thing is true when it comes to getting through to Kansas City. We can 'send it Bell, or go to H-l'—perhaps the same thing in the long run.

"In the current issue of the Hutchinson *Daily News*, about a dozen business men were quoted as being in favor of a single exchange system; these quotations were obtained by a Bell representative by a hard day's work canvassing the city. All the unfavorable comments and expressions were suppressed; and God knows they were ten to every one of the others easily enough. In the residence districts, Independent subscribers are simply fogging. The Bell came out with a long statement about a new four-story exchange building, a unified and superior service, and perhaps a slight (?) increase in rates, owing to the additional facilities they will be able to offer. About toll rates, you can guess as well as I can. The report is that Burns received $150,000 for his property, and the Bell manager claims he has another $150,000 to spend in remodeling and improvements.

"As to the outlook, the remaining Independents will find a way to get around, although Hutchinson was a vital point when considering toll territory. A few years Hutchinson will have another Independent exchange, but it is a safe guess that Burns will not be the promoter, for the business men of Hutchinson feel that he has jumped out from under his responsibility in a sneaking way."

American Union Company Involved in Continental Tangle.

On May 31 the American Union Telephone Company, with executive headquarters at Philadelphia, Pa., and operating headquarters at Harrisburg, Pa., went into the hands of a receiver. The case came before Judge Rellstab in the United States Circuit Court, and after hearing the application he named Charles West, of Philadelphia, and Frank D. Houck, of Harrisburg as receivers. It will thus be seen that the receivership is of the friendly order, as the company has for some years past been operated by Mr. West and Mr. Houck.

The application for the receivership was made by the Dean Electric Company of Elyria, Ohio, in which Max Koehler, who moved the receivership for the Continental company, is heavily interested.

Better Toll Connections Discussed at Kentucky Convention.

Important subjects were discussed at the meeting of the independent telephone interests of southeastern Kentucky at Middlesboro June 3 and 4. Toll connections for that section and the construction of a line between Louisville and Knoxville, Tenn., were the principal subjects on the program. The attendance, it is understood, was unusually large, on account of the aggressive spirit with which the Independents are going after the Kentucky situation. Among those in attendance were E. M. Coleman, President of the Louisville Home Telephone Co., and also president of the State association; S. M. Heller, of the Central Home Telephone Co., and P. S. Pogue, manager of the Louisville Home Telephone Co., D. H. French, president of the Lagrange Home Telephone Co., was also in attendance.

Telephone Men Join A. I. E. E.

In the May issue of the Proceedings of the American Institute of Electrical Engineers are the following names of newly elected associate members of the Institute: Merton J. Corwin, sales engineer, Dean Electric Company, Seattle, Wash,; Carl Eirich, district engineer, Pacific Telephone & Telegraph Co., Los Angeles, Calif.; Harold Weston Heald, inspector, Providence Telephone Company, Providence, R. I.; George Kellogg Heyer, electrical engineer, Western Electric Co., New York City, N. Y.; Bruce V. Hill, general foreman electrolytic division, Chicago Telephone Company, Chicago, Ill.; Franklin P. Oliver, district plant chief, American Telephone & Telegraph Co., Atlanta, Ga.; William Right Patton, Pacific Telephone & Telegraph Co., San Francisco, Calif.; Homer Jay Pierce, division equipment engineer, Northwestern Telephone Exchange Co., Minneapolis, Minn.; Edward Ashby Plumer, commercial engineering department, American Telephone & Telegraph Co., New York City, N. Y.; John Lynn Ryder, telephone engineer, Pacific Telephone & Telegraph Co., Los Angeles, Calif.; Hugh Darwin Saunders, district engineer, New York Telephone Co., Newark, N. J.; Cesar C. Walter Schnyder, Automatic Electric Co., Chicago.

Telephone Tax in Mississippi.

The taxation of telephone companies is a matter that is bothering the railroad commission of Mississippi no little, and the Attorney General has been appealed to for advice so that the commission may be certain of its bearings before it makes up the assessment rolls for the next fiscal year. The question is, are the Independents "common carriers," and subject to taxation?

It has recently been discovered that there are scores of little neighborhood telephone systems scattered about over the state, seventy-five or one hundred of them, it is said, and most of them make no report or showing to the commission, so that they have never paid any taxes.

The question before the commission is as to whether these little concerns are liable. They claim that they are not operated for profit, but admit that in view of the fact that they have physical connection with the Cumberland or some other of the bigger concerns, it occasionally happens they accept business to be gotten through to the long distance systems, they make a nominal charge for it—all of which goes to the maintenance of the line.

The chances are that the little telephone systems will be forced to pay taxes, but if so they will be valued so very cheap that the taxes will not amount to anything worth mentioning.

The commission has called for reports from the small fellows, but so far very few of them have responded. Those which have reported protest very vigorously that they are not in business for profit.

West Virginia Association to Urge Anti-Trust Legislation.

The executive committee of the West Virginia Independent Telephone Association recently passed a resolution, forwarded to the members of Congress for the State, urging them to favor the enlargement of the powers of the Interstate Commerce Commission, so as to empower that commission to regulate rates and service of all telephone companies doing interstate business, and to prevent discrimination.

Indianapolis Boomers' Train Equipped with Telephones.

The Indianapolis Trade Association is touring northern Indiana this week on a trade booming excursion. Three interurban cars were used to carry the members of the Trade Association and other persons interested in extending the trade of Indianapolis. The excursion train will be run over different interurban roads—the first night of the three days' outing will be spent at Warsaw, the second at South Bend. Telephone instruments are installed in the interurban cars by the New Long Distance and the Central Union telephone companies. This innovation is proving most satisfactory to the business men because they are enabled to keep in touch with their business offices and direct the work during the three days' absence. Special operators are accompanying the members of the Association and they can write out their messages and hand them to the operators to be telephoned when the stops are made, or they may do their own talking. The telephone companies make no charge for the service during the outing.

Marshalltown Rates Raised.

The Marshall Telephone Co., Marshalltown, Ia., has quietly raised rates on all classes of service 25 cents per month, to be rebated if paid before the tenth of the month, with an additional raise of 25 cents flat on residence service. The raises are as follows, including the 25 cents subject to rebate:

Residence, $1.50 to $2; offices, $2 to $2.25; business, $2.50 to $2.75.

This is the anticipated sequel to the consolidation with the Bell company, and is simply another item to add to the long list, showing what the public may expect from such consolidations. The next step will be a series of indignation meetings, and the organization of a new competing company. Telephone men need to study history.

Alfred J. Greathead Dead.

Alfred John Greathead, secretary of the John A. Roebling's Sons Co., of Illinois, died at his residence, 5645 Calumet Avenue, Chicago, May 21. Mr. Greathead has been connected with the Roeblings for over twenty-five years, and was highly esteemed by all who knew him. He was stricken with pneumonia, and died after an illness of but five days.

Mr. Greathead was born at Barnstaple, England, May 5, 1861. He was a member of Kenwood Lodge A. F. & A. M. and Fairview Chapter, Mont Joie Commandery Knights Templar. The funeral was held May 23, interment at Mount Hope. The decedent left a widow and three daughters.

Morgan Representative from New York Inspects.

F. H. McKnight, of the firm of J. P. Morgan & Co., of New York, was in Columbus last week looking over the plant of the Columbus Citizens Telephone Company, one of the Morgan concerns. While in Columbus he was the guest of Frank A. Davis, president of the company. It is rumored that he will be added to the boards of directors of the Ohio properties controlled by J. P. Morgan & Co.

Mrs. H. H. Gerhard's Death.

The many friends of Harry H. Gerhard, manager of the C. A. Wood Preserver Co., Austin, Texas, will be pained to hear of the death of his wife, which occurred at Austin, May 25. They were married in June, 1909, and TELEPHONY joins in extending sincere sympathy to Mr. Gerhard in his great bereavement.

Board of Trade Regulation Gets Reduction for Business Service.

The telephone committee of the New Orleans Board of Trade is understood to have drafted a contract with the Cumberland Telephone Company, that provides for a decrease in rates on unlimited service telephones in the business section.

Springfield, Mo., Case Goes to Federal Judge at Topeka.

The case of the City of Springfield vs. the Bell telephone company, in the matter of rates, has been referred by Federal Judge Phillips of Kansas City, to Judge John Pallock of Topeka for hearing.

Minnesota Rural Companies Must Pay Gross Earnings Tax.

More than three hundred country telephone lines in Minnesota which have heretofore paid a small valuation tax will hereafter be compelled to pay a gross earnings tax along with the companies in the larger cities. The decision to put the country lines on the gross earnings tax list was reached at a conference between the state tax commission, the state legal department and the public examiner.

By this action the commission estimates that the taxes from country lines will be increased fully 75 per cent, as many of the small companies have been paying no tax. There are about six hundred rural telephone companies in the state.

The arrangements for taxing the companies will be under charge of Frank Stacy, head of the telephone department in the office of the Public Examiner.

Complaint Against Bell Rates in San Antonio Hanging Fire.

Recently a special committee appointed to report on the petition of 1,500 citizens relative to rate changes of the Southwestern Telegraph & Telephone Company for its service at San Antonio, Tex., reported that it desired more time for consideration of the subject.

It is understood that at the time agitation was started, the service was compared unfavorably with that of the San Antonio Telephone Company, an Independent concern which has good local service at lower rates, but which is insufficiently provided with long-distance connections to entirely replace the Bell service.

Continental Receivership Hearing Postponed.

The hearing scheduled for May 31 in the application for a receiver for the Continental Telephone and Telegraph Company was postponed until Monday June 6. The subsidiary companies of the Continental are moving along quietly, giving service and taking care of their business.

New Independent Office Started at Cleveland.

Contracts have been let for the new Union exchange building, by the Cuyahoga Telephone Co., Cleveland, Ohio. It will be a fire-proof structure.

Application for Franchise to Build Competing System at Des Moines.

Just as the Bell telephone company is completing preparations for uniting its exchange with the system of the Mutual Telephone Co., at Des Moines, Ia., plans are being set afoot for organizing a new competitive concern. F. C. Williams, Carroll Wright and G. F. Henry have applied for a franchise.

Dayton Company Making Plant Additions.

Thomas Elder, president of the Elder and Johnston company, of Dayton, Ohio, was elected a director of the Home Telephone Company of that city at a recent meeting of the board of directors, to fill the vacancy caused by the resignation of F. R. Huntington of Columbus. H. B. Taylor of Columbus, treasurer of the United States Telephone Company, was elected treasurer of the Home company.

The company has started work of erecting additional substations and cables. Manager Ainsworth announced that it was expected to have this work done soon.

Operating Room of the Independent Telephone Company, San Antonio, Texas.

Louisville Rate Decision Postponed.

The Cumberland Telephone & Telegraph Co., which is trying to keep the city of Louisville from reducing its rates, will be able to hold on under its present schedule until October, at least, because Henry Burnett, the special master appointed by Federal Judge Evans to hear testimony on the case, has notified those interested that he will not be able to submit his report until fall. It will be the basis for the decision of Judge Evans.

Recent Telephone Inventions

By Max W. Zabel

ELECTRIC CABLE.

R. F. Hall, East Orange, N. J., pat. 957,506, May 10, 1910, assigned to Western Electric Co.

This cable is so designed that each pair of conductors are transposed every fifty or one hundred and fifty feet, so as to neutralize the induction which one pair may exert on another pair. The transpositions take a definite form so that each pair is twisted with a variable lay throughout the length of the cable.

DESK TELEPHONE STANDARD.

C. T. Mason, Sumter, S. C., pat. 959,243, May 24, 1910, assigned to Sumter Telephone Mfg. Co., Sumter, S. C.

This desk telephone is made of a one piece base and standard 1 and 2 and has secured within it the plate 5 for supporting the switchboard springs. A lug 3 is mounted to one side of the stem to support the transmitter. The switchhook lever 8 is screwed to the bell crank lever 10, which operates the switching springs. The screw which

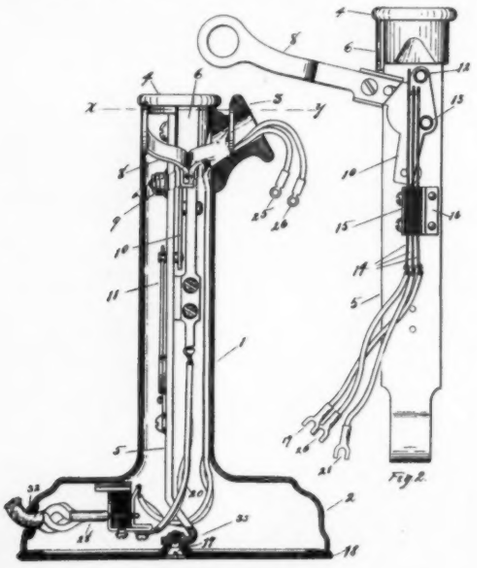


Fig. 2.

holds the lever 8 to the lever 10 is outside of the stem and the lever 8 can thus be removed without disturbing any of the other parts.

FIRE ALARM SIGNAL BOX.

F. S. Bronson, Rochester, N. Y., pat. 958,719, May 24, 1910, assigned to Denio General Electric Co., Rochester.

A signaling box for fire alarm systems is disclosed in this patent and its object is to provide an apparatus of fire call in connection with automatic telephone systems. The signaling apparatus is adapted to actuate the central office telephone switching mechanism, to automatically select the fire alarm headquarters and thereafter ring in the number of the box or the station and its location.

APPARATUS FOR FILLING DRY BATTERIES.

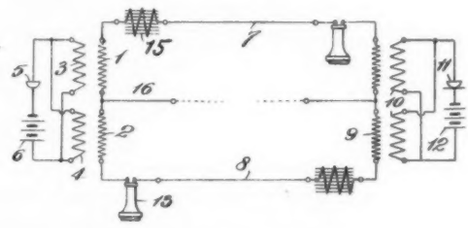
J. L. Heller, Ravenna, Ohio, pat. 958,394, May 17, 1910, assigned to Manhattan Electrical Supply Co.

The dry battery filling apparatus described by this invention, comprises a hooper and means for supporting the dry batteries in their incomplete state. Means for holding the carbons in position during manufacture and means for tamping the powdered mixture as it is forced into the zinc jar and around the carbon electrode are provided.

TRANSMISSION SYSTEM.

W. F. Gradolph, St. Louis, and W. C. Hahne, Chicago, pat. 958,868, May 24, 1910, assigned to Gradolph Electric Co., St. Louis.

A telephone transmission system is herein outlined, in which two metallic conductors, 7 and 8, are in inductive

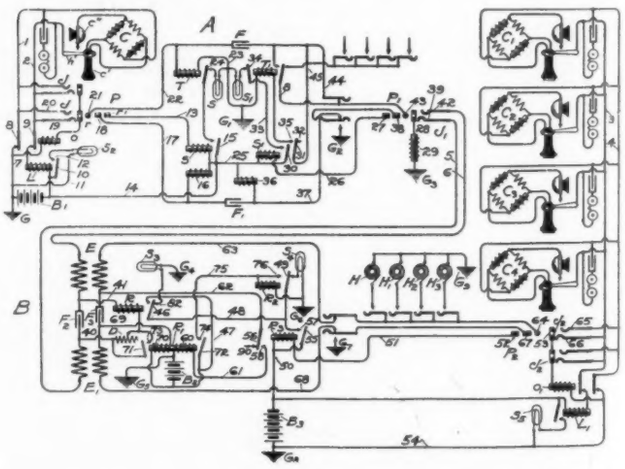


relation with each other, and which are also served by a so-called surging line 16. Each line 7 and 8 has an impedance coil 15. Induction coils as shown are connected with the transmitter and battery, and it is claimed that the arrangement thus set forth neutralizes in an inexpensive manner the capacity of a long conductor or cable.

TELEPHONE SYSTEM.

W. W. Dean, Elyria, Ohio, pat. 958,856, May 24, 1910, assigned to Dean Electric Co., Elyria.

The system outlined here consists in the provision of a trunk circuit between the A and B operators, which shall permit of signaling between operators without disturbing the talking circuit. To this end a relay R of low resistance is used, adapted to be connected in circuit with a variable resistance D through the trunk and cord circuit. This relay controls the disconnecting signal and is under the control of the A operator. After making the connection, the lamp S_4 is lighted in front of the B operator to indicate that connection has been made. When the plug is inserted, the lamp S_4 is independent of the A operator and serves as a ringing signal, being illuminated during the ringing operation. When ringing the relay R is energized

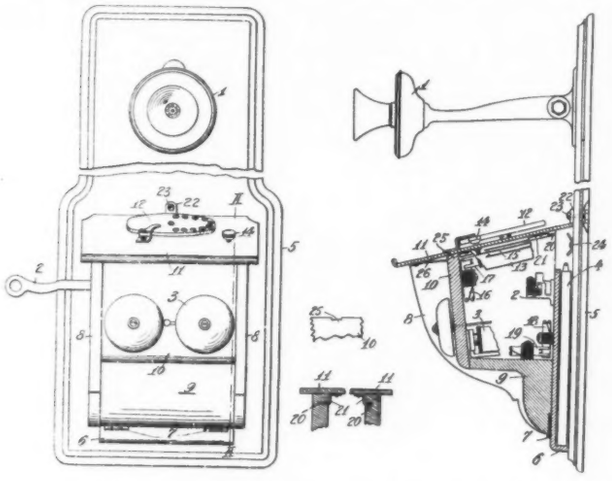


which thereby completes a shunt around the resistance D and thereupon operates the relay T, thereby interrupting the circuit of the lamp S_4, indicating to the A operator that the called subscriber has answered.

TELEPHONE SET.

W. Kaisling, Chicago, pat. 958,925, May 24, 1910, assigned to Kellogg Switchboard & Supply Co., Chicago.

In this patent is described a wall telephone having the ordinary shelf 11, below which is the apparatus box, and on top of which is mounted an actuating dial, 12, for use



in connection with automatic systems. A ringing button, 14, is also mounted on the shelf.

BATTERY CHARGING AND DISCHARGING SYSTEM.

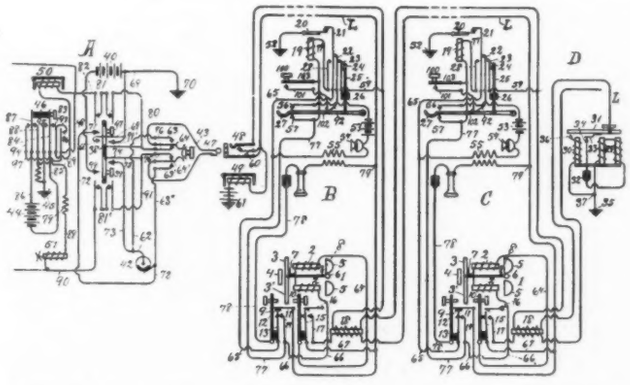
L. Fiedler, Stoke Newington, London, Eng., pat, 957,321, May 10, 1910.

The arrangement illustrated herein consists of a circuit connected with the positive pole of the storage battery and the positive pole of the charging machine, and a shunt circuit around this circuit. This shunt circuit includes a pair of solenoids and has means adapted to open the charging circuit and short circuit one of the solenoids on the accumulator becoming fully charged and to close the charging circuit and cut in the solenoid on the accumulator becoming sufficiently discharged.

PARTY LINE SYSTEM.

H. J. Roberts, Evanston, Ill., pat. 958,894, May 24, 1910, assigned to H. Roberts Telephone Co., Chicago.

This lockout system consists of the central station *A*, substations *B* and *C* and the grounder *D* at the end of the line. Each station has a restoring magnet 18, non-inductive, arranged serially in the line circuit. This operates the tripping members 11 and 16 to restore the apparatus to



normal after a call. The combined ringer and trip magnet is so arranged that its armature can vibrate in one direction without ringing the bell. When calling the armature 3, is moved to engage contacts 10, which movement does not operate the bell. The first impulse closes a metallic circuit to the first substation, and in like manner the second impulse closes a metallic circuit to the second substation. When going through a station, however, which it is not desired to call, the station is again disconnected. This is done when ringing by the operation of the armature of the trip magnet at each of the stations.

TRANSMITTING SYSTEM FOR SPACE TELEPHONY.

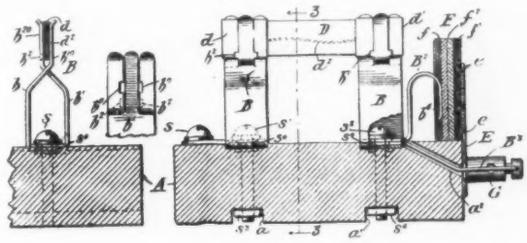
V. R. Laughter, Detroit, Mich., pat. 957,852, May 10, 1910.

The wireless telephone apparatus herein includes a transmitting set connected in circuit, and oscillation inducing means adapted to be adjusted to a state of inactivity close to the critical point. Means are further shown which are adapted, when influenced by sound waves, to bring the oscillation inducing means to the critical operative point. There are further means in the circuit with the transmitting set adapted to throw the receiving set into operative relation with the aerial limb of the transmitting set when the oscillation inducing means is inactive and to cut out the receiving set when the induction device is rendered active.

PROTECTIVE DEVICE.

R. H. Manson, Elyria, Ohio, pat. 957,977, May 17, 1910, assigned to Dean Electric Co., Elyria.

A protective device is illustrated using two springs *b* and b^1 whose upper ends are so arranged that the spring b^1 has one prong and the spring *b* two prongs to hold the



fuse d^2. The spring b^1 has projections b^2,b^2 to prevent the springs from separating when no fuse is inserted.

FUSED DISTRIBUTING BOARD AND CROSS CONNECTING RACK.

R. G. Hardgrave, Tucumcari, N. M., pat. 958,808, May 24, 1910.

A distributing board is set forth in which all of the connecting wires may be of the same length. For this reason, the connectors are mounted in the form of a circle around the central aperture through which the cross connecting wires project. Means whereby the outside connectors are mounted on one side and the inside connectors on the other side are also provided. A single ground block is used for all the connectors.

SWITCHHOOK.

B. W. Sweet, Cleveland, Ohio, pat. 958,979, May 24, 1910, assigned to H. Z. Sands, Cleveland.

The desk set illustrated herein has been previously digested. It is a divisional application covering features whereby a bell crank lever is mounted in a desk telephone to operate the springs. A switchhook lever removably secured to the bell crank lever, is mounted in place to permit of its removal after withdrawal of a portion of the casing of the standard.

CABLE CLIP.

T. J. Baugh, Hopkinsville, Ky., pat. 957,300, May 10, 1910.

A cable clip made of one piece of material is shown herein which is adapted to encircle the cable and the messenger wire. The strip has holes and prongs punched out of it, which act to hold the strip together to thereby support the cable in place.

Manufacturing Progress

H. A. Shepard Becomes Purchasing Agent for Ericsson Co.

H. A. Shepard has made a step forward in becoming purchasing agent for the L. M. Ericsson Telephone Manufacturing Company, Buffalo, N. Y.

Mr. Shepard is well known in the telephone field. He was formerly assistant purchasing agent of the Kellogg Switch-

Mr. H. A. Shepard.

board & Supply Company, and, prior to holding this position, had had practical experience in the shops of the Western Electric Company and the Kellogg Switchboard & Supply Company. His practical experience and technical training, as well as his ability to make friends of those with whom he comes in contact in a business way, well fit him for his new duties.

Why Induction Coils Give Out.

There are several reasons why a coil winding will break down or refuse to perform its work.

In the first place it may be incorrectly designed. There may be too much or too little resistance in the winding; the wire may be a wrong size; the coil may require too much current. But more probably, and more usually, the winding is not designed to carry an overload. This last involves to a great extent the character of the insulation.

Within the past few years enamel insulated wire has come to be used quite extensively in making up coils. This insulation consists of a coating of thin, elastic, non-porous, non-hygroscopic enamel baked on the wire at a high temperature and consequently unaffected by abnormal heat. Hence coils wound with this wire are not affected by moisture, with its

Group of American Coil Windings.

resulting short circuit. Again, if an abnormal current passes through the coil, the insulation is not charred and carbonized to form a short circuit.

Four years ago the American Electric Fuse Company, of Muskegon, Mich., perfected such an insulating enamel and placed its enamel insulated wire on the market. Coil designers have received it with special favor and many of the largest coil users now specify enamel insulation.

More recently the company has installed expensive equipment for coil winding. With this equipment and a competent engineering force, it is prepared to design and manufacture coils in any quantity and for any required work. Telephone induction coils receive special attention.

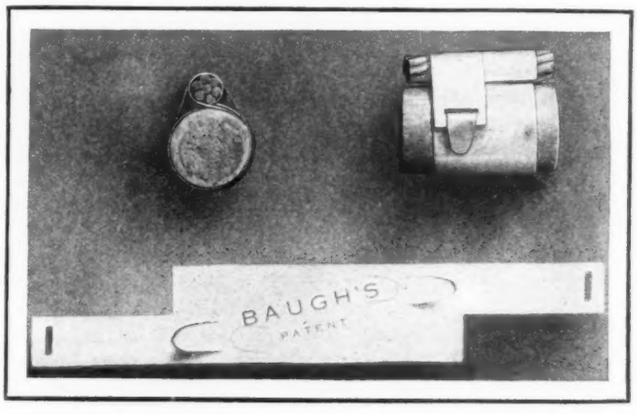
The New Baugh Cable Clip.

There has been a great demand in the last few years for a cable clip which will properly bond the cable, at the same time eliminate vibration and creeping which cause crystalization and breaking of the sheath and which has been a source of great trouble and expense to the operating plants throughout the country.

The Baugh cable clip which has just been patented, is made of a metal which, it is claimed, withstands the strongest acid tests, and therefore resists the gases which are so destructive. It can be adjusted to the messenger wire and locked in place very quickly, thus producing a saving in the time of installation.

The cable is supported in a proper manner so that vibration is eliminated, it is said; it maintains a good ground connection at each point of support for the sheath, thus tending to prevent electrolytic action.

It is claimed that it prevents the cable from creeping,



The Baugh Cable Clip Showing Manner in Which Cable is Held.

causing slack in one place and excess strain in another, inasmuch as it holds same very closely to the messenger wire. The passage of a cable car is permitted on account of the closeness with which the cable is bound to the messenger.

The illustrations show clearly the design and method of installation of the clip. It is manufactured and sold by the Baugh Cable Clip Company, F. G. Hoge, manager, Hopkinsville, Ky., who will be pleased to give further information regarding it.

Matthews Exhibit at the St. Louis Electrical Show.

One of the most interesting exhibits at the St. Louis Electrical Show was that of W. N. Matthews & Bro., in charge of Claude L. Matthews, with representatives Victor L. Crawford, alias, "Happy" Crawford, Walter E. Bischoff, H. E. Marshall also in attendance.

This booth was surrounded with a fence composed of six-inch Matthews' guy anchors, and on the center table was shown an exact model of the Matthews' guy anchor (scale one inch to the foot) which was screwed into modeling clay. The clay was then cut with a very fine wire. The

box was then pulled apart and the two halves of the clay showed conclusively that this anchor does not disturb the solid earth; therefore, could not give back.

A new invention, for use with the 5, 6 and 7 inch Matthews' anchors was shown and attracted a great deal of favorable comment; this is in the nature of a reinforced concrete sleeve that slips over the end of the rod and can be securely fastened thereto by means of liquid cement or "grouting." This does away with the trouble caused by the corrosion of rods of any kind at the point where they come out of the ground. These sleeves can be furnished at a lower cost than galvanized anchors. Patents have been applied for on this improvement.

Matthews' Polerector was very attractively shown by an exact model (made to a scale of ¼ inch to a foot) was shown lifting a pole. It was clearly demonstrated that three men could put in any pole up to 75 feet in length by means of the Matthews Polerector, two men being necessary to handle the pole, and one man to handle the team of horses drawing the wagon. The Matthews' Polerector can be attached to any standard 12-foot wagon bed.

The Way 2-bolt clamp, a recent invention of S. B. Way, Electrical Superintendent of the Union Electric Light & Power Co. of St. Louis was shown.

The thing that probably attracted more attention than anything else in this interesting exhibit was the "Linemen's Protector" which was under the direct charge of Mr. H. R. Marshall. Six enlarged photographs, 48 inches high, clearly showed the various applications of this shield in actual use by the linemen of the Detroit Edison Electric Illuminating Co., Detroit, Mich.

The Linemen's Protector is a device designed to protect the linemen working on a pole or on the ground or under the ground. Each shield is guaranteed to stand a test of 30,000 volts in its thinnest part while submerged in water.

Michigan Electric Specialty, of Muskegon, Mich., is mailing out a leaflet describing its Vac-M lightning arrester.

The Stromberg Electric Manufacturing Company, of Chicago, which manufactures a time-recording system, has moved from 141 North Jefferson street to its new factory, 1252-1256 Marianna street, where its general offices are also located.

The New Kellogg Mouthpiece.

Recently, announcement was made of a new transmitter mouthpiece placed on the market by the Kellogg Switchboard and Supply Company, Chicago.

Sectional View of the Kellogg Mouthpiece.

The accompanying illustrations show the structure of the mouthpiece. It is made of steel formed into the proper shape. This pressed steel form is covered with a rubber composition.

In order to fasten the rubber composition securely to the steel, two rows of holes are provided in the steel form. The form is placed in a mould and the rubber composition poured in. Great pressure is applied to the mould

View Showing the Holes in Steel Shell by Means of Which the Rubber Insulation is Held in Place.

and the rubber insulation is forced in shape around the form and into the holes completely covering the steel.

Matthews' Book of Underground Conduit Specifications.

W. N. Matthews & Brother, St. Louis, Mo., have just published another book on construction work, this time taking underground construction as the topic. The subject is fully discussed from the selection of the route for the conduit to filling of the trench after the conduit has been laid. Sections of the book are devoted to the various types of conduit, such as multiple duct, single duct, fibre and monolithic. Diagrams of each kind are given, showing the various formations together with dimensions and area figures. Tables are given showing the cost of each in streets paved with granite or equivalent paving, exclusive of manholes.

The book contains a great deal of information compiled in a compact usable form. It will be sent to telephone companies interested in underground conduit construction, free of charge. Additional copies for companies may be obtained by forwarding fifty cents. Individuals may also obtain them upon payment of a like sum.

Crouse-Hinds Company, of Syracuse, N. Y., announces that its Chicago office is now located in the Plymouth building, 303 Dearborn street. Mr. F. F. Skeel is the company's western manager.

Mountain State Electric Company, of Wheeling, W. Va., has issued a folder relating to "Hall's" galvanized T brackets. An interesting 14-page booklet containing clear illustrations and readable test relating to the Poole lockout system for common battery party lines has also recently been published.

The United States Light & Heating Company, general offices at 30 Church street, New York, announce the removal of its Chicago office, on May 1st, from 745 Monadnock building to 1013 Peoples Gas building, Michigan avenue and Adams street.

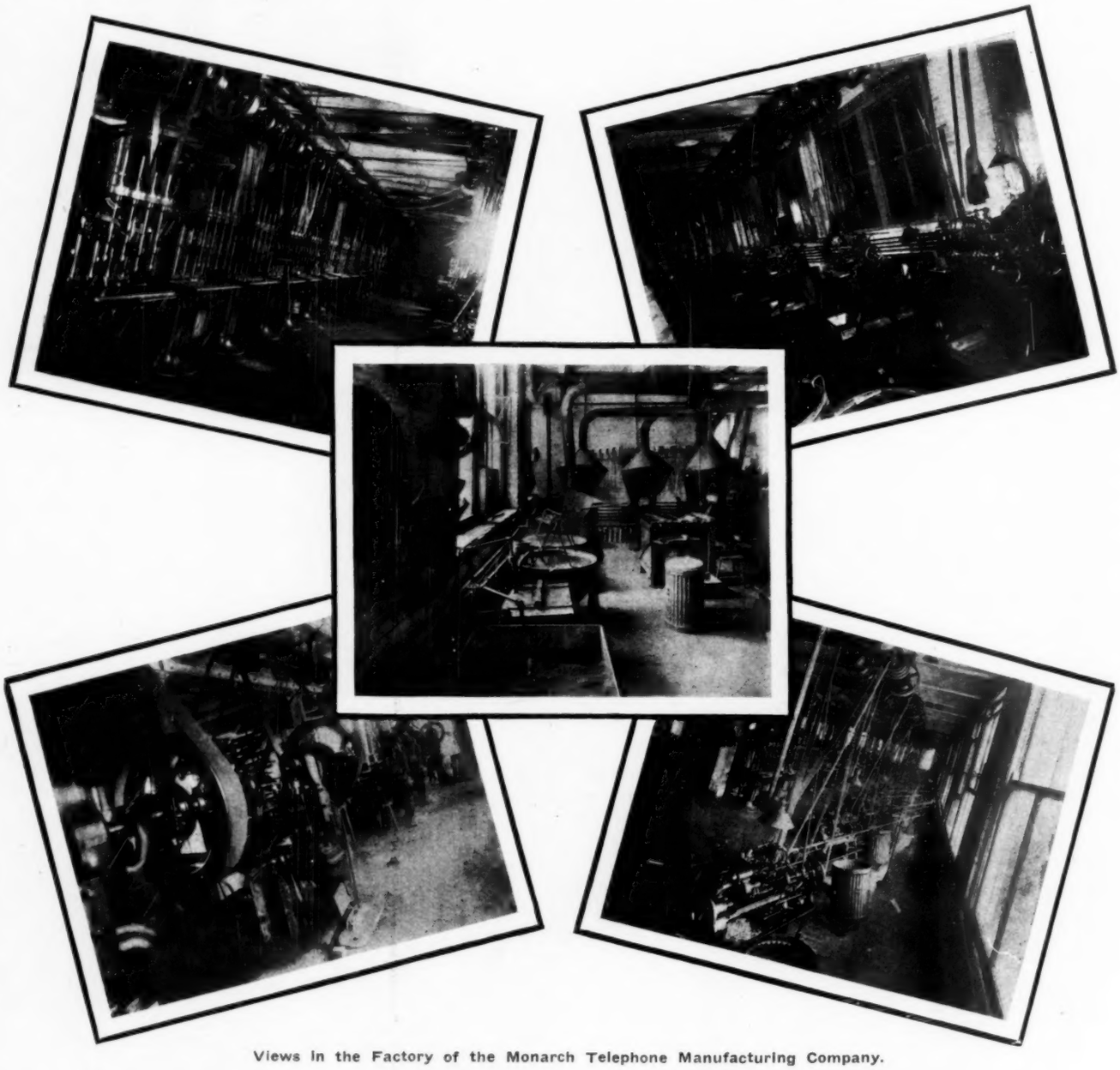
Valentine-Clark Company, the well-known dealers in cedar poles, have just moved to fine new quarters in the McCormick building, one of Chicago's finest new buildings on Michigan boulevard, corner of Van Buren street.

Monarch Electric and Wire Company, Chicago, Ill., in the May issue of the Current Advisor has some amusing paragraphs under the heading, "Wise and Otherwise." This paper is issued to keep purchasers in touch with leading items in the large list of supplies which this company furnishes.

Modern Shop Machinery.

It is always interesting, even to the laymen, to make a visit to a manufacturing plant as there is so much that can be learned. This is especially true in a telephone manufacturing establishment where so many small parts which are used in various parts of telephone apparatus are made.

The accompanying illustration shows some of the various departments in the factory of the Monarch Telephone Manufacturing Company, Chicago, Ill. The lower right hand illustration is a general view of the screw machines and drill presses, while the two upper views show them more in detail.



Views in the Factory of the Monarch Telephone Manufacturing Company.

With the screw machines, shown in the upper right hand corner, are made many various kinds of screws. The drill presses, shown in the upper left hand corner, drill several holes at the same time in iron and wood parts of telephone equipment. The powerful drill presses shown in the left hand corner form pieces and punch several holes in transmitter and subscriber's set parts. The central view shows a portion of the forges where practically all of the iron working is done. It is extremely interesting to watch the blacksmiths at work at their gas fed forges, with which all modern shops are now equipped. In watching the men working at these different machines one cannot help but be impressed with the great value of automatic machinery as now developed. A machine will now do the work in one operation which formerly, by hand, took the time and services of several men.

The Paragon Sellers Company.

It is announced that the Paragon Sellers Company has taken over the business of the Durant Electric Supplies Company and Frank W. Pardee of Chicago.

The new company which is located at 56 Fifth Ave., Chicago wil continue to manufacture and sell all the specialties and supplies handled by its predecessors and in addition will develop new specialties. The officers of the new company are: President, E. M. Platt; vice-president, F. W. Pardee; secretary E. E. Dewey and treasurer R. E. Macduff.

The Mills Electric Company, of Peoria, Ill., jobbers of electrical supplies, has issued a catalog of 512 pages, a copy of which will be furnished to anyone in the trade.

Condensed News Reports

Officers of companies are earnestly requested to forward us promptly all financial and other statements as soon as issued and any items of interest as to their plants and systems

PERSONAL.

MR. S. E. FISHER, of Detroit, Michigan, has been appointed manager of the Zenith Telephone Company, Duluth, Minn.

MR. U. N. BETHELL, president of the New York Telephone Company, has been elected a director of the Columbia Trust Company of New York City.

DR. ALEXANDER GRAHAM BELL recently passed through Winnipeg, Canada, on his way to the Pacific coast, where he will take a steamer in continuance of a voyage around the world, which he has long desired to make.

MR. CHARLES P. MORRILL, who for some time has been local manager for the Pacific Telephone and Telegraph Company at Santa Rosa, California, has been promoted to the position of assistant to the general superintendent, with offices in San Francisco.

MR. WALTER CLOYD, who has been working as assistant to the district manager of the Rocky Mountain Telephone Company at Idaho Falls, Idaho, has been made manager of the exchanges in Reaburg, Sugar City, and St. Anthony, with headquarters in Rexburg.

MR. J. M. PORTWOOD, who for 16 years has been acting manager of the Decatur, Illinois, exchange of the Home Telephone Company, has been made manager of the Macon County Telephone Company, which operates throughout Macon and adjoining counties. Mr. Walter Hutchin has been made manager of the local exchange, and both he and Mr. Portwood, will be assistants to Dr. J. W. Collins, who is general manager and president of both companies.

MR. E. M. COLEMAN, president of the Louisville Home Telephone Co., who is one of the most widely known telephone men in the United States, is receiving congratulations from his host of friends on his recent marriage. Mr. Coleman has long been regarded as proof against Cupid's arrows but lately surrendered to the continued attacks of the little god. He married Mrs. Belle Giles, who rivals Mr. Coleman in the number of her friends both in Louisville and the state at large.

OBITUARY.

MR. ERNEST SIMONS, who was for seven years employed by the Louisville branch of the Cumberland Telephone and Telegraph Company, was electrocuted while doing some repair work on one of the company's lines in New Albany, Ind. Mr. Simons was exceptionally well known and liked in Louisville telephone circles, and the accident came as a sad surprise to his numerous friends. He was repairing a line and accidentally came in contact with a live wire, the entire current passing through his body. In respect to his memory, officials and employes of the Cumberland company attended his funeral in a body, and all business except attention to the regular calls was suspended during the afternoon of his burial.

NEW COMPANIES.

DIVIDE, COLO.—The Divide Mutual Telephone Company has been organized by E. J. Merriam, Joseph Lambert, John Hill, Mose Gray, and Frank Smith. The company will construct and maintain telephone lines, but was not organized for profit.

MACOMB, ILL.—The Pleasant Telephone Company, incorporated by Robt. E. Crabb, Joseph M. Randolph and John F. Ellis, has been chartered by the Secretary of State.

PORTLAND ME.—The El Refugio Mining Company with an authorized capital stock of $1,250,000 has been incorporated by Chas. Todd Moffett, Boston, Mass., president; John H. Pierce, Portland, Me., treasurer; Frank H. Purinton, Portland, Me. The company will construct and maintain telephone lines.

BURNIPS CORNERS, MICH.—The Salem Telephone Company has been organized, and farmers' lines will be constructed in this vicinity. The directors of the company are: H. Weber, J. M. Gordon, M. C. Loew, George Heck, C. Raab, W. C. Loew and C. DeJongh.

KERKHOVEN, MINN.—The Kerkhoven Louriston Telephone Company with an authorized capital stock, common, $5,000, has been incorporated by J. H. Lewis, president; Wm. Strom, vice-president; Fred Armstrong, secretary; O. G. Hough, treasurer, all of Louriston.

CURTIS, NEB.—The Curtis and Fox Creek Telephone Company has been chartered by the secretary of state with an authorized capital of $5,000. T. R. Elson, Wm. Barackman and Wm. Schick are the incorporators.

GRANT, NEB.—E. H. Hill, B. F. Hastings, E. C. Hoffman and F. M. Bell are the incorporators of the newly chartered Grant Telephone Company. The company is capitalized at $4,000, par value of share $50.

ALBANY, N. Y.—The Waldon Telephone Company has been incorporated by C. F. Fowler and J. Oliva, of Walden. The company is capitalized at $30,000.

LINDLEY, N. Y.—The West Lindley Telephone Company has been incorporated by A. J. Hill, Wallace Cook, Homer S. Titus, Fred Toles and Harry Miller, of Presho, and Philip Morse and Frank Morse, of Lindley. C. O. Stowell, Corning, N. Y., is incorporating attorney.

ANTLERS, OKLA.—The Antlers & Carinue Telephone Company has been incorporated with an authorized capital stock of $500. Incorporators are Barney Noel, Carinue, Okla.; Wm. Westmoreland, Antlers, Okla.; A. A. Lesseur, Antlers, Okla.; Jake Easton, Antlers, Okla., and G. T. Johnson, Antlers, Okla.

HOBART, OKLA.—The Lawrence Telephone Company with an authorized capital stock of $600 has been incorporated by G. E. Neal, S. P. Hanes, F. C. Leslie, E. Bale and R. H. Armstrong.

MOORELAND, OKLA.—The Moreland Telephone Company has been incorporated with a capital stock of $12,000. M. P. Myers, N. R. Ames, T. H. Whiteneck, A. S. Jenish and F. E. Schilling are the directors of the company.

RED OAK, OKLA.—R. A. Welch, C. A. Sturgeson and I. C. Talley are the organzers of the Red Oak Telephone Company. The company is capitalized at $2,000.

HANOVER, PA.—The Pleasant Hill Telephone Company was recently chartered by the secretary of state. John P. Welterstorf, Willis H. Houck, Henry E. Macen, John H. Marle and John F. Morris are the incorporators. The company will construct and operate lines in York county.

LAKESIDE, PA.—The Lakeside Rural Telephone Company has been chartered with a capital stock of $10,000. Henry W. Kraus, Ryon Twp., Schuylkill county; Wm. C. Seddon, Ryon Twp.; William Sparr, Barnesville, and Joseph Handschets, treasurer Barnesville, are the incorporators.

MT. PLEASANT, PA.—The Mt. Pleasant Farmers Telephone Company has been incorporated and chartered by the secretary of state. J. C. Byers, Nelson Poorbaugh, R. S. Love, C. B. Ruff and Isaac Sherrick are the incorporators. Capitalization is $5,000.

SALEM, S. D.—Articles of incorporation have been filed by the Blankhartz Telephone Company, with headquarters at Salem. The incorporators are Thos. Kelly, August Blankhartz, Jos. Blankhartz and others.

BOSCOBEL, WIS.—The Sanders Creek Telephone Company, of which C. H. Kratochovil, G. W. Young, C. Baumeister are the incorporators, has been chartered. The company is capitalized at $700.

FINANCIAL.

FREEPORT, ILL.—The directors of the Stephenson County Telephone Company at the recent annual meeting, declared a semi-annual dividend of 2 per cent.

HATTIESBURG, MISS.—The Hattiesburg Home Telephone Company, under the same control as the Meridian Home company, reports its receipts for the last quarter as $3,652.37, against $3,777.43 for the same period last year. Expenses, $2,034.83, as against $2,019.76 for last year.

MERIDIAN, MISS.—The Meridian Home Telephone Company reports to the Railroad Commission that during the quarter ending the last of March, its total receipts were $7,331.13, as against $7,380.11 for the same period last year. Its expenses were $3,999.77, against $4,310.82 last year.

LINCOLN, NEB.—The Farmers' Telephone Company of Dodge County, Fremont, has been granted permission to increase its capital stock from $20,000 to $25,000. The company contemplates making some extensions to its lines, and making improvements likewise. The North Table Telephone Company, of Valentine, has been permitted to increase the capital from $1,950 to $3,050.

SOMERSET, PA.—The Somerset County Telephone Company has declared its 15th quarterly dividend of 2 per cent. For the past three years the company, it is reported, has been earning 8 per cent per annum.

WARRIORS MARK, PA.—An amendment to the charter has been filed by the Huntington & Center County Telephone Company increasing its capital stock from $5,000 to $10,000. J. M. Wigton, Harry G. Ebbs and Edward J. Neff were the judges to the election. John T. Patton, Huntington, is secretary.

STANTON, TENN.—The Stanton Telephone Company has filed an amendment to its charter increasing the capital stock from $1,000 to $4,000.

KAUKAUNA, WIS.—The stockholders of the Kaukauna Telephone Company held a meeting recently for the purpose of taking

FRANCHISES.

up the matter of increasing the capital stock of the company. It was voted to increase the capital by $5,000, making a total of $10,000. This increase was made to permit the company extending the line into new territory in which the demand for telephones is becoming great.

INDIANAPOLIS, IND.—The Northwestern Telephone Company of Lowell has filed an amendment to its charter increasing the capital stock of the company from $10,000 to $25,000. L. D. Belshaw is secretary of the Northwestern company.

NEWCASTLE, IND.—The Newcastle Telephone Company has been granted an extension of 25 years to its franchise. The franchise includes the statement that in case the company should at any time have exclusive control of service in Newcastle, 1 per cent of earnings are to be turned into the city treasury.

BUSHTON, KANS.—The Bushton Telephone Company has been granted a franchise by the City Council to construct and maintain a telephone system in this place.

LONGBRANCH, WASH.—The Sound Telephone Company has been granted a franchise by the Pierce County Commissioners to construct lines. The company will build lines covering McNeill's Island, Meridian, Longbranch, Lake Bay, Glen Cove and Waughn. This will be about 30 miles of wire, and two submarine cables 4 miles in length will be laid. The officers of the company are: B. B. Sampson, Vaughn, president; J. A. McGoldrick, Gertrude, vice-president; S. S. Watkinson, Longbranch, secretary; W. J. King, Home, treasurer; and E. L. Wheeler, Lake Bay, director. The company is capitalized at $5,000. Construction is to start very soon.

CONSTRUCTION.

OSAWATOMIE, KANS.—The Osawatomie Telephone Company, T. L. Youman and S. S. Whiteford, props., reports that it will string about 7,000 feet of cable, sizes ranging from 300 to 25 pairs, and will lay about 300 feet of underground cable.

CARRS FORK, KY.—The Carrs Fork Telephone Company will overhaul the greater portion of its system, and will build some new extensions in the near future.

HARLAN, KY.—The Upper Cumberland Telephone & Telegraph Company, recently incorporated, will soon begin the construction of long distance lines between Harlan and Pineville and Cumberland Gap and Middlesboro, Ky.

HINDMAN, KY.—The Knott County Telephone Company will improve its system to a considerable extent. A new switchboard will undoubtedly be installed and some line improvements made.

LUDINGTON, MICH.—The United Home Telephone Company reports that within the next few months it will build about 22 miles of No. 10 copper circuit toll lines, and many extensions to rural and city lines.

WILLISTON, N. D.—The Muddy Valley Telephone is soon to construct about 10 miles of line, bids for such construction having been called for by N. B. Newman, secretary of the company.

DALHART, TEX.—It has been reported by the new owners of the Dalhart Telephone Company, D. O. Hazelton, of Wainwright, Okla., and Allen Spain, of Dalhart, that the Dalhart system will be changed to a modern all-cable system. Concrete anchor blocks and cedar poles are being used in the construction of the lines, and the equipment will be thoroughly modern and efficient. All poles are to be treated with a preservative. The switchboard will have a present capacity of 500 lines with an ultimate capacity of 1,000 lines. About 7 miles of cable is being strung, cable capacity being 675 lines.

ELECTIONS.

DECATUR, ILL.—Officers of the recently organized Macon County Telephone Company are: W. E. Surace, vice-president; Dr. W. J. Collins, president and general manager; G. S. Gonnard, secretary; P. E. Kuhl, Lincoln, treasurer. The company was organized for the purpose of buying and operating small companies around Decatur, Ill., and the stockholders of the Macon County Company hold an interest in the Decatur Home Telephone Company, although it is to be operated at a separate institution. The company has already secured control of the exchanges at Bethany, Dalton City, Lake City, Mt. Zion, Elwin, Argenta, Oreana, Cisco and Warrensburg.

EARLING, IA.—The stockholders of the Earling Mutual Telephone Company met and elected the following directors and officers: P. J. Korth, J. C. Heese, F. W. Loehr, N. Langenfeld and M. Rau. P. J. Korth, president and manager, F. W Loehr, vice-president, J C Heese, treasurer and N. V. Kuhl, secretary.

LOUISVILLE, KY.—The offices of secretary and treasurer of the Louisville Home Telephone Company, which heretofore has been held by one person, have been separated, and Col. J. D. Powers, who was elected a director a short time ago, was put into the office of treasurer of the company. George M. Boone continues as secretary.

NEW ULM, MINN.—The stockholders of the New Ulm Rural Telephone Company elected the following directors for the ensuing year. J. P. Graff, Fred Plaender, F. H. Retzlaff, Wm. James, F. J. Backer and Jos. F. Groebner, of New Ulm; Jos. Weisner and H. Fritsche, Cottonwood; Wm. Gluth and F. Rolloff, Milford; Fred Foss and N. Reinhart, Courtland; A. Schilling and Fred Wellner, Lafayette, and L. P. Bushard and Alex Russell, West Newton. The company pays a dividend of 7 per cent to its 337 stockholders, and during the past year $5,000 was placed in the depreciation fund.

LANCASTER, OHIO.—At the annual meeting of the stockholders of the Lancaster Telephone Company, the following directors were elected: Frank A. Davis, Columbus; Gansey R. Johnston, Columbus; W. L. Cury, H. B. Taylor and E. G. Tillotson, of Cleveland.

NEW YORK CITY, N. Y.—The stockholders of the Continental Telephone and Telegraph Company elected the following directors at a recent meeting: J. N. Vance, Senator William Flinn, Herman C. Stifel, Geo. E. House, John A. Howard, A. S. List, Samuel W. Harper, Mac Koehler, Robert C. Hall, W. S. Dickey, G. E. Stifel, W. C. Handlan, John W. Garland and William M. Clark.

MT. VERNON, OHIO.—At a recent meeting of the directors of the Mt. Vernon Telephone Company, Frank L. Beam was elected president; W. P. Bogardus, vice-president; H. C. Devin, secretary; P. S. Kelser, treasurer, and Edward O. Arnold, general manager.

PORTSMOUTH, OHIO.—At the annual meeting of the Home Telephone Company of Portsmouth, held recently, the following directors were elected: W. V. Schwartzbaugh, Cincinnati; Charles Duncan and J. S. McKell, Chillicothe; Dr. W. D. Tremper, Levi D. York, W. R. Fee and Harry S. Grimes, Portsmouth.

SALEM, OHIO.—The annual meeting of the stockholders of the Columbiana County Telephone Company was held a short time ago and Frank A. Davis, Columbus, was elected president of the company. Other officers are W. C. Morron, Lisbon, vice-president; W. L. Carey, Jr., Columbus, secretary; J. W. Steinhauser, H. B. Taylor and G. R. Johnston, Columbus, directors.

ZANESVILLE, OHIO.—Frank A. Davis, Columbus, was elected president of Janesville Telephone & Telegraph Company at the recent stockholders meeting. Other officers are: Sherman M. Granger, vice-president; J. B. Rhodes, secretary and general manager, and H. B. Taylor, treasurer.

MANITOWOC, WIS.—T. H. Meany was elected chairman of the board of directors of the Manitowoc and Western Telephone Company at the recent annual meeting of the company. Other members of the board are J. P. Watt, of Maple Grove; Geo. Wittman, of Whitelaw; F. J. Schaffer, of Branch, and N. W. Killen, of Cato.

OCONTO, WIS.—The annual meeting of the shareholders of the Oconto Rural Telephone Company was held recently and George Glynn was elected president. Other officers are: Yarwood Matravers, vice-president; H. L. Reeves, secretary-treasurer, and J. D. McKeevers, W. E. Whiting, Sam McDowell, John Lundgren, Ed. Couillard, Donald McQueen are directors.

WAUPACA, WIS.—The Waupaca & Ogdensburg Telephone Company held its annual meeting recently. The following officers were elected: President, H. J. Nelson, St. Lawrence; vice-president, Peter Johnson, Waupaca; secretary, C. O. Christianson, Waupaca; treasurer, Chris Rasmussen, Waupaca.

HONOKAA, HAWAII.—The annual meeting of the stockholders of the Hamakua & South Kohala Telephone & Telegraph Company was held a short time ago and officers and directors were elected. They are: Wm. Horner, president; L. C. Aungst, vice-president; A. B. Lindsay, auditor; J. Pritchard, secretary-treasurer; K. S. Gjerdrum, J. G. Jones and A. Smith, directors.

MISCELLANEOUS.

DE QUEEN, ARK.—The DeQueen Telephone Company published a notice a short time ago notifying its subscribers that government weather reports would be furnished them.

CALUMET, MICH.—The town of Alston was practically destroyed by fire recently and telephone wires were down.

BORCULO, MICH.—The telephone line connecting this place with Zeeland will soon be ready for use. The poles have been set and the wires will soon be strung.

GRANDVILLE, MICH.—The Citizens Telephone Company is rapidly pushing forward the work on the exchange system being installed here.

STURGIS, MICH.—The property of the Sturgis Telephone Company has been purchased by the Southern Michigan Telephone Company. The new company will make some improvements and possibly some extensions.

BUCYRUS, OHIO.—Automatic telephones are being installed by the Bucyrus Telephone Company.

KRAUSSDALE, PA.—A number of farmers residing between the Goshenhoppen Turnpike and Kraussdale, met recently and organized the Kraussdale Rural Telephone Company.

PITTSBURG, PA.—Elevators in the Henry W. Oliver building, a 25-story building, have all been equipped with telephone service, according to reports recently received. A dispatcher in charge of the elevator service can get into immediate touch with the operators of the cars.
its rates.

DALHART, TEX.—Messrs. Hazelton & Spain, owners of the Trans-Canadian Telephone Company, purchased the holdings of the Dalhart Telephone Company in that city for a consideration of $10,000.

UNDERGROUND.

HUTCHINSON, KANS.—All wires of the Bell telephone company, it is reported, are being laid underground in the business section of the city. The present undertaking involves the laying of 1,000 feet of four-way ducts, and more is to be laid later.